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SURVIVAL

GUIDE

Inferno

**ULTIMATE
GUIDE TO
SURVIVING
WILDFIRE**

**GET IN
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SHAPE
TODAY**

**BEST
GUN
FOR SELF
DEFENSE
THE M1911**

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FATAL
FLORA &
FAUNA**

**HOW TO
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GAME
9 EASY
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REVIEWS

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**GERBER'S
POTENT
MYTH
TRIO**

**K9 RX:
THREE
FIRST
AID KITS**



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YOUR MISSION. OUR COMMITMENT.



10.15

ON THE COVER:

Escaping the unpredictability and devastation of a forest fire is a tricky gamble. With the right tools, gear, and knowhow, making it out unscathed is possible. The Pulaski courtesy Council Tools, the fire shelter courtesy Fred Parr; the MCE2 hollow-handle knife courtesy Martin Knives, and the backpack courtesy Mystery Ranch.

Photo: Henry Z. De Kuyper

Design: Jesse Cao

Models: John Devine and Jean

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Ryan Lee Price
rprice@EngagedMediaInc.com

Top of the Food Chain? You Wish.

Stepping off the pavement and into the woods, the grasses, rocks, rivers, pastures, or wherever, you've stepped away from your place at the top of the food chain. People tend to not understand that only at home are you unequivocally the dominant species. Sure, there are dog attacks and spider bites and you might come across the occasional snake or two in your backyard, but when you go into the wilderness, even for a couple of hours, you are surrounded by things with fur, feathers, and fangs always looking for their next meal. If they're desperate enough, that meal might just be you.

Believe it or not, the most deadly creature on the planet (besides single-celled viruses and bacteria... and beside man himself, of course) is the lowly mosquito. It is the Bloody Mary of the insect world, transmitting the malaria parasite and causing the death of nearly three million people each year.

However, malaria is rare in this country, thanks in part to modern medicine, vaccines, and quality health and safety codes regarding stagnant water. We have bees to contend with, as they directly kill more than 50 people each year in the U.S., mostly due to an allergic reaction to their venom. Black widow spiders kill a half dozen people every year, as do rattlesnakes, scorpions, and centipedes. But these

can be prevented by education, caution, and seeking medical attention when needed.

There are only three animals in the U.S. that are able to hunt humans in the wild: sharks, alligators, and mountain lions. Though shark attacks are rare and alligator attacks happen mostly on golf courses, it is still unnerving, not just because they can kill humans, but because the idea of being stalked, killed, and eaten is horrific.

You're only on top of the food chain because of your intelligence to make tools. The claws and teeth of an animal are no match for knives and guns and bows and arrows, mostly because it keeps us at a safe distance. But take those away and drop you in the middle of the forest or the Everglades, and you'll quickly discover that bare hands and bared teeth pale in comparison to the claws of a mountain lion or the ripping teeth of an alligator.

Then again, you're more likely to be killed by your own pet (31 deaths a year) or by hitting a deer with your car (130) or by a horse (20) than you would a mountain lion (1).

But, you don't want to be that one this year, do you?

Average Number of Deaths per Year in the U.S.

Bee and Wasp	>	53
Dogs	>	31
Horse	>	20
Spider	>	6.5
Rattlesnake	>	5.5
Bull	>	3
Mountain lion	>	1
Shark	>	1
Alligator	>	0.3
Bear	>	0.5
Scorpion	>	0.5
Centipede	>	0.5
Elephant	>	0.25
Wolf	>	0.1



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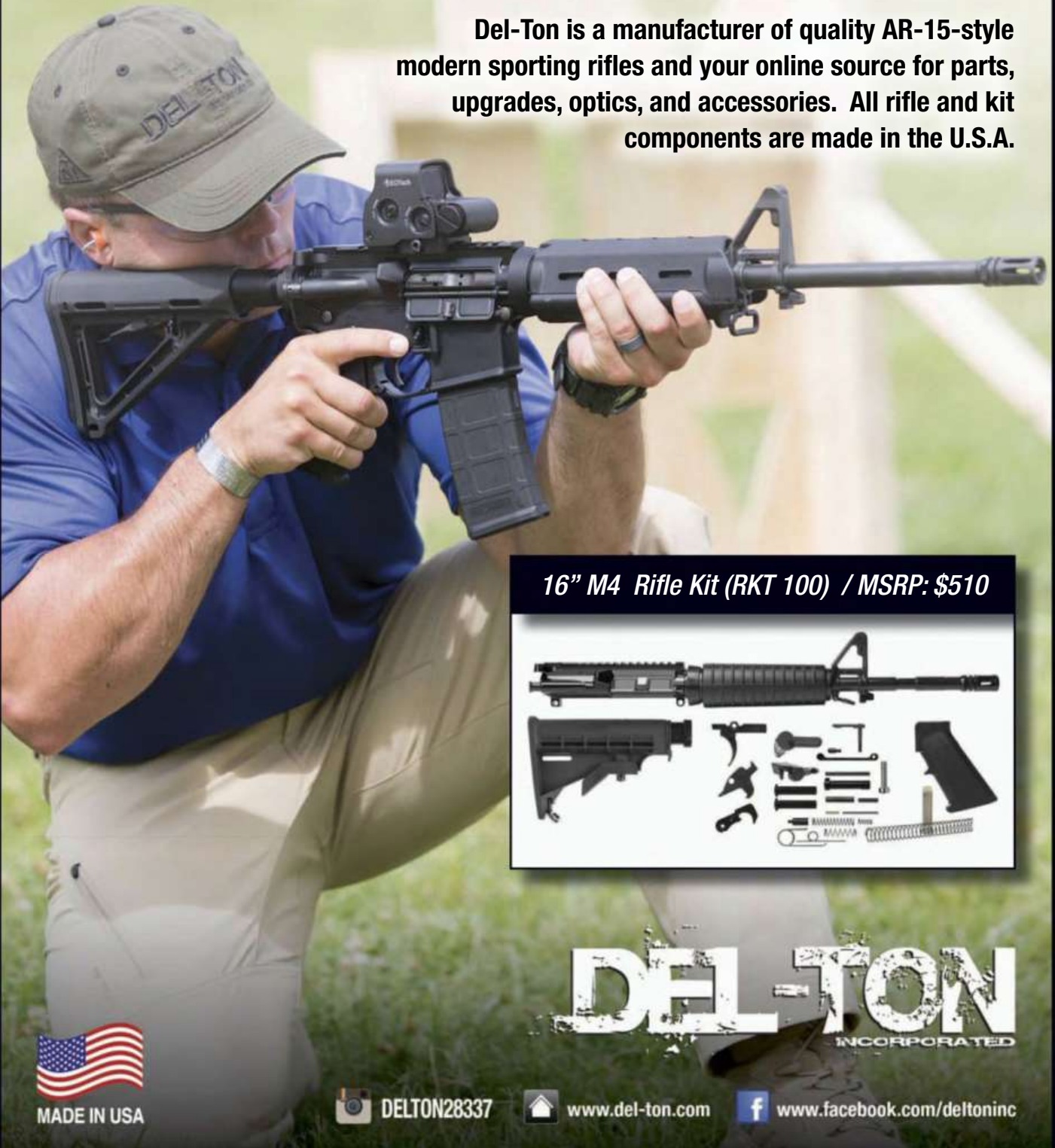
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DIY

Some folks just like to do things for themselves.

For those of you who do, Del-Ton has a complete line of rifle kits to fit any need or budget.

Del-Ton is a manufacturer of quality AR-15-style modern sporting rifles and your online source for parts, upgrades, optics, and accessories. All rifle and kit components are made in the U.S.A.



16" M4 Rifle Kit (RKT 100) / MSRP: \$510



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WISE EMERGENCY FOOD SUPPLY

ITEM #09-0034

Ready made meals packed in airtight, nitrogen-packed Mylar pouches and then encased in easy to carry, durable plastic containers. 60 servings per bucket.



REG. \$229.95

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\$179.00

RADIATION DETECTION SET

ITEM #11-4400

Set consists of 6 CD V-742 0-200 roentgen scale dosimeters, 1 dosimeter charger, 1 CD V-715 High Level Meter 50mR/hr-500 R/hr, 1 CD V-700 low-level meter, 0-50 mR/hr with probe and 1 headset. Includes printed Radiation Detection Instrument Use Guide and Radioactive Material Emergency Field Procedures folder with checklist. Case measures 14"L x 10"W x 8½"H.



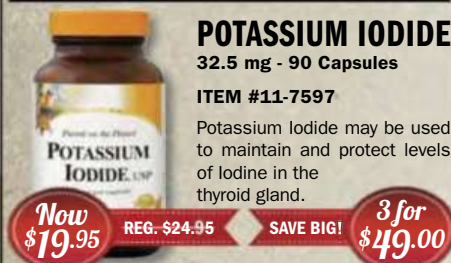
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MSP COMPACT PORTABLE SOLAR CHARGER

ITEM #11-0035

Waterproof, dust proof and shock resistant solar charger. Includes an emergency LED flashlight, dual USB/Micro charging ports, carabiner, Micro USB cable and iPhone 4/4s connector. Measures 5½" x 3" x 0.5". **3 Colors Available: Black, Orange, Yellow**



POTASSIUM IODIDE

32.5 mg - 90 Capsules

ITEM #11-7597

Potassium Iodide may be used to maintain and protect levels of Iodine in the thyroid gland.

Now
\$19.95

REG. \$24.95

SAVE BIG!

3 for
\$49.00

RELIANCE

BPA FREE
no bisphenol-A

REG. \$16.95

Now
\$13.95

RELIANCE 5 GALLON WATER-PAK CONTAINER

ITEM #13-0024

The new Water-Pak is designed for superior strength and can be stacked 2 high. Includes a secondary swivel handle, embossed fill lines and hideaway spout that can be easily installed to act as an on/off spigot. Container is Bisphenol A-free. Measures 10"L x 11"W x 16"H.



REG. \$29.95

Now
\$22.95

LIFESTRAW WATER FILTER

ITEM #13-0019

The LifeStraw personal filter water enables users to drink water safely from contaminated water sources. It's ideal for homeowners during emergencies and for campers and hikers who may be drinking from rivers or lakes unsure of the water safety. LifeStraw surpasses EPA guidelines for E. coli, Giardia, and Cryptosporidium oocysts, rigorous standards for water filtration.



DUPONT TYCHEM® COVERALL

ITEM #01-0300

Heavy weight Personal Protection suit made of DuPont Tychem CPF 2 that meets or exceeds ANSI/ISEA 101-1996 size standards. Complete with attached booties for wear over shoes and boots, elastic wrist cuffs and hood. New, unissued. Size: M, L, XL. Please specify size.

REG. \$9.95 ea.

2 for
\$14.95



Gas Masks and Gas Mask Filters are not for sale outside of the U.S.A. Sold as a novelty item only. Gas masks, filter and accessories are Not Returnable or Refundable.

Now
\$24.95

ISRAELI GAS MASK WITH FILTER

ITEM #08-0773

Comes with one sealed NATO filter. Gas mask is 1 size fits all for adults age 12 and older. Mask is new, unissued condition with hydration port, allowing the user to drink without having to remove mask.



REG. \$17.95

Now
\$14.95

STEEL FOLDING SHOVEL

ITEM #02-9060

Folding shovel with contoured tubular steel handle with welded 'T'. Large, heavy duty steel blade. Folds flat for compact carry or locks into full-length or 90° positions. Measures 19"L folded and 27½" extended. Blade width is 10"L x 7½"W. New.



REG. \$39.95

Now
\$34.95

20 LITER MILITARY STYLE FUEL CAN

ITEM #08-3191

Store fuel for four wheeling, lawn mowers, generators, etc. Welded spout with locking pin that must be slid to the side to open cap. Cap with rubber gasket.

3 Colors Available: O.D., Sand, Red

Not to be sold in the following States: CA, CT, DC, DE, MA, MD, ME, NH, NJ, NY, PA, RI, VA, VT and City of Dallas, TX

NEW METAL CLAMP ON NOZZLE

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Each flood sack will absorb and retain over three gallons of water, creating a non-toxic natural barrier that will divert flowing water and will provide continuous flood control.

PREVENT BOAT DAMAGE

Stop water from building up in the engine compartment of your boat

Roll the bags up and pack them around the base of the engine compartment for safety

RECYCLE YOUR DAM IT UP BAGS

When you are done with the bags, lay them out flat for up to 3 days and watch them dry completely. Once dry, they can be recycled

FEATURES

- Requires less time, manpower and transport, than traditional sand bags
- Each bag measures 14" x 26" and expands up to 4" in height once activated

FLOODS, EARTHQUAKES, HURRICANES & MORE

Use them as a barrier to protect entry ways, doors and plumbing

Divert wind, rain and floodwater

Roll up the bags and insert them into a drainpipe or toilet to protect your home from sewer waste, entering through these appliances

Position them to provide a barrier across the bottom of a standard two-car garage

PREVENT DAMAGE FROM CHEMICAL SPILLS

Control toxic spills in a fast, timely and effective manner

Easy to activate design, enables response teams to quickly encircle a spill to block a water drain

They will absorb and or divert liquid chemicals from a spill

GARDEN WATER SUPPLY RESERVOIR

When buried below your food and garden plants, the bags absorb moisture and act as a reservoir that the plant can pull water from

Buy in Bulk and Save Big

25 Pack

ITEM #08-0434

BEST BUY! REG. 99.95

**Now
\$49.95**

5 Pack

ITEM #08-0589

REG. \$19.95

**Now
\$14.95**

HOMEOWNERS KIT

PACKED IN ITS OWN CARRY BAG

ITEM #08-0433

2 Multipurpose Units, 8" x 98"

6 Dam-it-up bags 14" x 26"

REG. \$59.95

**Now
\$39.95**



VISIT OUR STORE: 435 W. Alondra Blvd. Gardena, CA 90248



NEW 10.15 PRODUCTS

1

Wear this Tool

Correction: Wear these tools — there are 29 of them in this wearable bracelet. Tools on the go? Each 17-4 stainless steel link has a tool, like Allen wrenches, box wrenches, hex drives, a glass breaker, cutting hook, screwdrivers, and more. It's adjustable to 1/4 inch, so it can fit any wrist.

- Corrosion-resistant
- 5.9 ounces
- Comes in black or stainless steel

leatherman.com

\$150



1

2

Tiny Action Cam

New from GoPro is the HERO4 Session, the smallest and lightest version of a GoPro camera so far. As usual, it's still got the waterproof engineering and one-button control. The HERO4 is available in standard and surf versions, which has surf mounts.

- Video is 1,080p
- Photos are 8 megapixels

gopro.com

About \$400



2

3

Smartphone Charging Weather Alert Radio

This Eton AM/FM/NOAA weatherband radio with solar power offers weather alerts, a digital display, glow-in-the-dark locator, an emergency beacon, and an LED flashlight. There's hand crank power, too.

- Rechargeable battery
- DC power input
- Headphone jack
- 5.5 inches tall

abt.com

\$69.99

3





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ASG? WHEN YOU'RE
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guidemagazine](https://www.facebook.com/americansurvivalguidemagazine)

4

Pocket Washing Machine

If you need clean clothes on the go, this is a pretty easy product to pack and use. In fact, there's only a few steps to get you from dirty to like-new. Fill the Scrubba Wash Bag, roll it closed, deflate it, rub, rinse, then dry. The secret ingredient is the flexible internal washboard.

- Microbial
- Hydrolysis-resistant polyether TPU
- Comes with travel clothesline
- 5 ounces

thescrubba.com

\$55

5

No More Fogged Goggles

The Abominable — or A-Bom — is a snow goggle with active anti-fog tech, meaning you push a button and there's no fog, no smears. This is different from fog-resistant, which may mean adjusting vents; these are continuously powered, so fog never forms. Patented KLAIR translates to an invisible heat-conductive film. The goggles are helmet-compatible and have an anti-scratch coating.

- 6-hour rechargeable battery
- USB cable included
- Carl Zeiss lens

abom.com

About \$250



6

Three-Section Backpack

The Three Pack is the Postalco Bridge Bag with three individual compartments. There are also double leather-wrapped handles on top to make it a bag you can carry. On the downside, it's a bit costly, but then an organized bug-out kit is priceless.

- Hammer nylon fabric
- Quick-access zippers
- Cushioned laptop compartment

postalco.net

Around \$500

NEW 10.15 PRODUCTS

7

Turn-Signal Glove

Sometimes survival is just about getting from Point A to Point B on a bike and without incident, so we're digging the turn-signal glove from Zackees. There's a switch between the thumb and index finger that turns on LED lights — visible even in daylight — that lets anyone behind you or around you know you're turning left or right with a flashing arrow. The batteries have a life equal to two months of daily use (4 minutes of blinking each day).

- Has absorbent towel around thumb
- Breathable spandex
- Leather palms
- Machine washable

zackees.com

\$84.99-\$99.99

8

Energy Snack

PowerBar has stepped it up in the protein department, adding new ProteinPlus 30-gram bars in salted caramel and peanut butter cookie, plus an improved flavor of chocolate brownie. But what we found most interesting is that you can buy PowerBars in a 96-pack (as well as a 12-pack) since having bulk product that doesn't have special refrigerator needs is important for your emergency kit, and you can store some in your backpack as well.

- TriSource protein blend
- No preservatives
- Crunchy texture

powerbar.com

\$238 (\$33 for 12-pack/under \$3 for individual bars)



9

Fish Tools

This Rapala combo tool pack includes necessities for when you catch fish. There's a deluxe Falcon Filet Knife, Fisherman's Pliers, and a Fishing Clipper. The knife features a flexible stainless steel blade for easy filleting plus a slip-resistant texture. The pliers also have a split shot crimper, lure tuning tool, and light-duty side cutters, while the fishing clipper takes care of tag ends no knots and line cutting.

- Clipper has cutting knife and line pick
- Knife has in-field sharpening ability
- Pliers are carbon steel

rapala.com

\$26





10

BCM Gunfighter Stock

Bravo Company's BCM Gunfighter stock is the strongest light-weight polymer stock available for your mil-spec AR's receiver extension. A new patent-pending latch reinvents the stocks interface with a mil-spec receiver extension, providing the user with superior strength when dropped or when mortaring malfunction clearance drills. It has a snag-free design. There are no sharp edges prevent tangling of the rifle with the shooter's sling, MOLLE gear, or other kits. The modular VBOST (Vehicle Borne Operations Sling Tab) interfaces with the shooter's riggers' band or bungee to secure the shooter's sling against the stock when the carbine is not in use. Simple modular design: five parts and one screw allow for modular adaption of future stock options and configurations. Available in black, flat dark earth, foliage green, and wolf gray.

bravocompanyusa.com
\$55.95



11

Walking Sticks

Walking sticks are pretty useful as is: keeping you stable on rough terrain. But the Manfrotto Off Road photographic walking sticks include an integrated camera mount into the handgrip for an instant monopod. Otherwise, the poles also have a comfy handgrip and a wrist strap.

- Lightweight aluminum
- Feet have spiked base
- 52 inches max height
- Baskets included for snow

manfrotto.com
Around \$100

12

Hydration System

We're going to quote the company's website: "Did you know you can fit almost two handles of booze in one 3-liter Cenote Reservoir?" The gist of it is, Cenote reservoirs are recyclable—making them alone in that trait within the hydration-pack market — meaning you can fill them with water, sports drinks, or the aforementioned unmentionable. It offers 360-degree drinking and has on/off positioning. The company also carries replacement parts.

- BPA- and phthalate-free
- Antimicrobial
- Dishwasher safe

cenote.com
Starts around \$15



NEWS^{10.15} & NOTES



New National Bio- and Agro-Defense Facility Underway

GROUND HAS BROKEN on the Department of Homeland Security and the United States Department of Agriculture's new National Bio- and Agro-Defense Facility main lab in Manhattan, Kansas. The goal is to have state-of-the-art capabilities to protect the food supply, public health, and animal agriculture. It's the first Bio Level 4 lab of its kind, and can study foreign animal and emerging diseases. It's expected to be completed in 2022 at a cost of \$1.25 billion.

“

Basically, you drink the water, you go to the toilet, you pee, and we collect it back, and clean it.”

—GEORGE MADHAVAN, DIRECTOR OF CORPORATE DEVELOPMENT WITH SINGAPORE'S PUBLIC UTILITIES BOARD, TO *USA TODAY*, ABOUT THE RECYCLED SEWAGE WATER PROCESS SINGAPORE HAS FOR CREATING DRINKABLE WATER DUE TO THEIR WATER SHORTAGE



PHOTO BY EDUCATION IMAGES / GETTY IMAGES

Undercover Red Team Spots TSA Weak Spots

UNDERCOVER FEDERAL AGENTS working within the Department of Homeland Security and known as Red Team went on a mission to watch for security issues and TSA screener fails. The team sported hidden explosives and weapons — and managed to conceal them from TSA screeners 67 out of 70 times, which equals more than 95 percent, according to the Los Angeles Times. The plan that has come out of this is to retrain every screener and supervisor across the U.S. and to re-test screening equipment. The Red Team blamed inattentive screeners and malfunctioning equipment.

PHOTOGRAPHY BY MARVIN NAUMAN/FEMA



Florida Ranks Worst in Damage from Storm Surges



Allstate Insurance to Use Drones

ALLSTATE INSURANCE wants to develop aerial drones to inspect damage and snap photos after disasters, especially places not suitable to reach on foot. It could mean paying customers quicker when it comes to claims.



THE 2015 STORM SURGE REPORT from CoreLogic studied hurricane-related storm surges and how they cause property damage on the Atlantic and Gulf coastlines. Florida has the most homes at risk compared to the rest of the U.S. In 2014, the National Hurricane Center created storm surge warning maps and also began sending out warnings.



DOD Developing Hoverbike

THE DEPARTMENT OF DEFENSE signed an agreement with MA Hoverbike to have a hoverbike prototype built to act in the same capacity as a helicopter. This allows the move away from rotors in a helicopter design. And it's cheaper to buy and use. The plan is for the hoverbike to be capable of manned or unmanned use, for things like rescue missions and dropping cargo into tight spots.



Child-Centric Disaster Planning Begins

THE NATIONAL CENTER FOR DISASTER Preparedness is working with GSK and Save the Children to create a model that could go nationwide for child-focused disaster planning. The goal would be to create procedures and guidance for how to meet the needs of children during a disaster.

PHOTOGRAPHY COURTESY CDC/AMANDA MILLS

NEWS^{10.15} & NOTES

May 2015: Wettest Month Ever

ACCORDING TO THE NATIONAL CENTERS for Environmental Information, May 2015 was the wettest month on record for the U.S. — and the organization has been tracking weather data since 1895. Dry in your area? The southern Plains took the greatest hit, but Oklahoma and Texas saw their wettest — which ended their droughts.

PHOTO BY NXP CHASERS / GETTY IMAGES

FEMA Launches Volunteer Tech Corps

THE FEDERAL EMERGENCY MANAGEMENT Agency has created Tech Corps, a new nationwide network of trained technology volunteers who will help out with tech issues during a disaster. So far, companies such as Google, Microsoft, and Intel are among those that have signed on with the program. The volunteers would be used to install temporary networks, help with geographic information system capability, data analytics, and more. To learn more, go to fema.gov/tech-corps.

PHOTOGRAPHY COURTESY FEMA



D-Day, Paintball-style

MARK YOUR CALENDARS NOW — Oklahoma D-Day takes place at D-Day Adventure Park every June and is a re-creation of the battles of the Normandy Invasion during World War II, including Omaha Beach. Did we mention it's the largest game of paintball in the world? The game even uses equipment and vehicles from the time, and teams are either Germans or Allies. Go to ddaypark.com/paintball/dday/ to learn more, or check out the documentary "Soldiers of Paint" on Netflix. **ANI**



DRINK FROM THE SOURCE
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**SURVIVING THE
DEATH AND
DESTRUCTION OF
NATURE'S WILDFIRES**

Story by **Kevin Estela**

FEA

10.15

FANNED BY POWERFUL WINDS, THE BLAZING INFERNO RAGES OUT OF CONTROL. HUNDREDS OF ACRES IN THE ONCE-PRISTINE FOREST HAVE BEEN CHARRED, AND THERE IS NO END IN SIGHT, THE FLAMES RELENTLESSLY LEAP FROM TREE TO TREE, SENDING BILLOWING SMOKE INTO THE NIGHT AIR. THE SEVERITY OF A WILDFIRE IS AMPLIFIED BY DROUGHT AND HIGH WIND. TRAPPED WITHIN THE REACH OF THE FLAMES, THE SURVIVOR MUST KEEP HIS HEAD STRAIGHT WHEN DECIDING HOW TO ACT AS TEMPERATURES AND STRESS LEVELS RISE. WILDFIRES POSE AN ENORMOUS DANGER TO LAND, PROPERTY AND LIFE, AND YOU NEED A PLAN FOR SURVIVAL.



Fire Shelters

» **What do wild land** firefighters use for fire protection when they have nowhere to run? The answer is a fire shelter. Local, state and federal firefighting agencies are carrying these shelters and understand their value in lifesaving. Made from a combination of aluminum foil and silica weave, a fire shelter can be deployed in a matter of seconds and offers the final line of defense should a fire overtake a wild land firefighter. Used directly against the ground in an area as free of combustible material as possible, all the firefighter has to do is hold onto the internal handles, breathe shallow breaths to protect from hot air and smoke and simply wait until the fire passes. This is easier said than done given the intense pressure put on the individual. In the best circumstances, the shelter will protect from passing flames, embers and heat. In the worst circumstances, like those surrounding the deaths of 19 of the best firefighters, the Hotshot crew from Arizona in 2013, the shelters can't overcome the heat and the occupant perishes. These shelters are available for private purchase for around \$400 but are meant for use by professionals only and should not be considered a contingency plan if other options are present.

AWARENESS

Fire warnings usually accompany weather updates on the morning news and large fire danger warning signs stand outside the entrance to most high traffic parks. Recognizing the threat before it becomes one gives you time to run mental "what if" scenarios. This process will also help you prepare your home in advance. Home preparation includes keeping grass watered, clearing land around your property of dead growth and keeping sufficient lengths of garden hose handy. Those wishing to take preparedness to the next level may opt to have their own water supply and fuel-powered pumps to get to remote places.

Being familiar with possible scenarios and solutions speeds up your response time. If you are advised to evacuate an area, don't hesitate. If you must evacuate your home, and have a timeframe to safeguard your home before you leave, remove combustible materials from near the base of any structure and close all your windows and doors to reduce airflow. Make certain to pack important documents that cannot be replaced or have them stored elsewhere in a safe location. Maps should already be staged in every vehicle as backups to GPS units. At zero hour, don't wait behind. Keep moving and get out of the path of the fire.


Should you be on vacation or traveling through a rural area on business, listen to the advice of authorities. Don't rely on the advice of locals as they may have emotions driving their actions rather than reason. Drive with your lights on and avoid traveling in unknown areas through heavy smoke as driving off road can happen in reduced visibility. If possible, travel with a small emergency crank radio if you are in the backcountry. Ask park rangers which AM station park notices are sent out through and check it frequently.

MOVEMENT AND TERRAIN

While the best defense against a wildfire is simply running away, there is nothing simple about it. Running blindly from a wildfire could get you killed. Having an understanding of terrain and the ability to read topographical features will improve your chances of survival. Running down into a steep ravine will limit your escape path if the walls are too steep to climb back out. Descending down a ridgeline might be the better option if the flames aren't too high as it offers a clearer lay of the land. The best option may be traversing and slowly descending just below the ridgeline should the heat be too

**"RUNNING
BLINDLY
FROM A
WILDFIRE
COULD
GET YOU
KILLED."**

PHOTO BY NUREE / GETTY IMAGES



great on top and a ravine too far below. Running toward a water feature such as a lake or river can save you as can running toward a commercial area with large parking lots with nothing combustible around to burn.

Always consider where you are moving to when escaping fire. Think of where you are running to instead of simply what you are running from. This location should be coordinated and understood by all of those in your party/neighborhood. If the original rally point in a safe location is compromised (overcrowded, unavailable, unsafe), there should always be an option B and even C. Communication while moving is also important. CB radios will function better than cell phones for instant delay-free communication.

In most scenarios, moving to a lower elevation is part of the correct response, but in certain circumstances, climbing in elevation may be safer. Understanding terrain helped stranded hikers in Yosemite Valley in September 2014. Rather than riding out the flames in the valley, the hikers made their way to the top of Half Dome, a large granite rock formation where helicopter rescue was possible.

PROTECTION FROM HEAT/FLAMES

The typical human response to feeling heat is to turn away or throw up an arm or two to shield from the heat. Placing an object between you and flames is an effective way of blocking the heat but make sure to be selective in what you use. On a large scale, understanding forest composition will help you gain time in your evacuation. Softwood trees such as hemlock, pine and spruce will burn much faster than hardwoods like maple, beech and oak. Hardwood trees are not fireproof, just fire-resistant. Movement through hardwood trees will provide better protection from heat and flames than a softwood forest where fire can spread more rapidly.

Your vehicle may offer temporary protection. However, vehicles burn and once they are on fire they burn dangerously. Gas tanks rarely explode, but it is possible. If sheltering in your vehicle, park far from heavy brush, roll up your windows, and close any and all vents. Should a clear opening present itself and vehicle travel is no longer an option, do not be afraid to



“LUCK IS NOT A PLAN AND YOU ONLY HAVE ONE CHANCE TO SURVIVE.”

UNDERSTANDING FIRE

Hot air rises along with hot air flames, embers and ash and strong winds have the potential to carry embers over great distances, causing spot fires. Although the best defense against a wildfire is putting space between you and the fire, nature doesn't always help. Understanding the prevailing wind where you are will help you estimate the safest route for evacuation. This should be determined long before the fire threat exists. If you normally reside in a high fire risk area, evacuation through this route should be rehearsed regularly.

Fire can travel up and downhill, as well as over flat terrain, although fire travels fastest uphill. For every 10 degrees of slope increase, fire will double its speed and for every 10 degrees of decreasing slope it will half its speed. This point is easily conveyed with a burning match. Held horizontally, the match will burn at a set speed but with the match head angled down, it will burn much faster.

Fire also has the potential to travel underground in root systems. These fires can smolder underground until they reach a spot where they are exposed to the air and reignite. Fire can “jump” or skip over lines of protection. This potential does not bode well for the outdoorsman as it adds to the unpredictability of wildfire. If all that is left is the inevitability of wildfire, the logical approach is to take steps to improve chances of survival when it happens.

abandon a vehicle if a road becomes impassable and you must continue on foot. If you must abandon your vehicle along a road, make sure to pull as far off the road as possible for fire response and emergency vehicles to come through. Take only the essentials for travel and continue moving away quickly and methodically.

REMOVING FLAMMABLE MATERIAL

As previously stated, removing flammable material is part of the process of controlling the burn around your property/area. Tools that help with this process include chainsaws, brush rakes, McLeod tools, Pulaskis, and shovels. Having these tools available and knowing where they are will improve your chances of responding in time to make a difference.

Removing flammable material pertains to you as well. Many outdoor garments are made with synthetic fabrics for wicking. These fabrics will melt under extreme heat and can cause extremely painful, dangerous and potentially deadly burns. Even if a layer of flame-retardant clothing is worn as an outer garment, a wicking or insulative layer can melt between the outer garment and the skin. With enough heat any fabric will burn. However, wool, leather and non-waxed canvas are better options than any synthetic with the exception of Nomex. A good option is to soak wool blankets and wear them over the head and shoulders like a poncho.

Leather gloves will help protect your hands from hot surfaces. Assuming you must move through a previously burnt area, you do not want to burn your hands on residual embers or hot surfaces. Also, heavy rubber-soled boots are a better choice for overland travel than lightweight sneakers with outsoles composed primarily of shock-absorbing foam.

DRASTIC ACTION

It seems counterintuitive to set a fire to protect against a fire, but this is what smokejumpers and wildfire specialists sometimes do. Deliberately burning fuel sources an approaching wildfire will consume limits its strength and ability to spread. Rather than having the entire force of the



PHOTO BY MARTIN FLASHBACK / GETTY IMAGES

wildfire behind the flames, smaller more manageable fires can be set to pre-burn areas with better control over the situation. A controlled burn (the keyword is controlled) is not simply lighting any available fuel on fire. Heavy uprooting, raking and digging are done prior to staging the burn. This is done to make the fire more manageable once it is lit. The biggest hazard is letting this fire grow out of control to stop, which is why in the vast majority of cases those who are properly trained are the only people who should attempt this action.

WHEN ALL ELSE FAILS

Assuming you have no viable evacuation route to safety, you must locate the lowest point with as little vegetation as possible around you. Since heat rises, this should be where the lowest temperature will be found. With any luck, this low point may be a creek or small trickle of water. If so, test the water to make sure it isn't scalding hot, cover as much of your body in it and keep your head down. If you are carrying water, cover your clothes in it and stay low to the ground breathing through a dampened cloth or your shirt collar. Smoke inhalation can kill you just as can exposure to flames. One word of warning with wet clothes though, in some fires, they have caused steam burns. Protect your eyes from airborne embers and your skin by repeated cooling with creek water or rolling side to side to pick up any moisture or coolness from the ground.

The emotional connection to vehicle, home and land can preoccupy the mind but the ultimate goal is survival. Fire destroys violently but humans can always rebuild. Even the worst wildfire to date of publication near San Diego in 2003 eventually was controlled, but not before burning over 270,000 acres, 2,200 homes and claiming 15 lives. The death toll would have been much higher without the heroic work of rescue personnel and quick thinking residents. Survivors of this wildfire and others have cited luck and chance as reasons for their survival. Luck is not a plan and you only have one chance to survive. Make your own luck through careful planning, practice and preparation. ■■■



FIRE BY THE NUMBERS

24,008

Fires reported in 2014

823,185

Acres affected by fires in 2014

1967

The year NOMEX was first marketed to the public

400-500 gallons

Average amount of water a fire truck can carry

2,600 gallons

Largest Bambi firefighting bucket for a helicopter

20

Number of matches in a standard book

6

Number of weeks for California smokejumper "rookie school"

3.5

Pounds of weight for average Pulaski tool

\$3 Billion+

Annual cost of wildfire protection

90 percent

Percentage of body burned that can result in survival

SOURCE: [HTTPS://WWW.NIFC.GOV/FIREINFO/NFN.HTM](https://www.nifc.gov/fireinfo/nfn.htm)

KEY TEMPERATURES IN FAHRENHEIT

451

Temperature that wood and paper burn

1,100

Temperature of a burning match, minimum

1,472

Temperature of a forest fire

5,000

Approximate temperature of ferro rod sparks



FIRE SURVIVAL GEAR

» FIRE IS AN EMERGENCY SITUATION THAT CALLS FOR SPECIALIZED GEAR - GEAR MADE SPECIFICALLY FOR EITHER FIGHTING FIRES OR SURVIVING THEM. THOUGH SUBSTITUTIONS ARE COMMONPLACE BECAUSE MOST PEOPLE DON'T HAVE HANDY THE GEAR NEEDED TO FIGHT A FIRE, HERE IS SOME OF THE EQUIPMENT YOU SHOULD KEEP IN STOCK IN CASE YOU ARE EVER FACE TO FACE WITH A WALL OF FLAMES.

1/ Fire Blanket

This fire blanket is 5 by 6 feet and manufactured with 1,000-degree fiberglass fabric. It has the ability to block out air to smother a fire, either on a person, the ground, a stove, or any other type of surface.

lifesavingequipment.com
\$65

2/ Emergency Escape Hood

Keep one of these handy for all members of your family. When a fire breaks out, this escape hood will provide you with 20 minutes of smoke and chemical-free air while you escape the situation. The hood and mask are made with a flame-resistant aluminum foil cloth, while the visor is polycarbonate.

amazon.com
\$29.99

3/ Chemical and Smoke Escape Hood

The SR 77-2 is a filtering respiratory protective device combined with a hood for self-rescue in the event of a fire or a chemical emission accident. The hood is based on a Sundström silicone half mask, which is mounted in a hood made of flame- and

chemicals-resistant material. It is equipped with a gas filter that provides short-time protection (60 minutes) against carbon monoxide and other toxic gases that may be emitted in a fire.

srsafety.se
\$177.49

4/ Mystery Ranch Big Sky

With its innovative three-zippered design, the pack can be opened from the top or, if you have a grip of awkward gear, it can be splayed open by unzipping down the middle. There are two compression straps to keep your gear stowed tight and an array of webbing for exterior gear. There are ports and a place for your hydration pack, as well as large side pockets for water bottles or other items. The zippered top pocket keeps smaller items close at hand.

SPECIFICATIONS:

- Volume: 3,000 cubic inches
- Weight: 3 pounds 6 ounces
- Dimensions: 22 x 12 x 8.5 inches
- Available sizes: S to XXL

mysteryranch.com
\$279

5/FatMax Xtreme Fubar

This is an 18-inch-long, four-in-one tool to be used for prying, splitting, board bending and striking jobs. It features a textured grip, and the steel is tempered to prevent chipping.

SPECIFICATIONS:

- Weight: 4 pounds
- Length: 18 inches
- Material: Tempered steel

Stanleytools.com

\$54.99

6/McLeod Wildland Fire Tool

With a strong, flat serrated rake on one side and a sharpened hoe on the other, this compact, versatile tool is designed to make short work of cutting and clearing brush, removing litter, carving out trails, and much more. The teeth are ideally shaped for clearing brush, raking grasses and twigs, or clearing debris. The sharpened edge of the hoe will scrape bark from tree trunks, cut through roots and scrub, and chip out hard soil and debris to make a smooth trail.

SPECIFICATIONS:

- Head dimensions: 11 x 8-3/4 inches
- Length: 50-1/2 inches
- Heavy-duty welded construction
- Steel head is attached by a hex nut for fast removal or replacement
- Corrosion resistant powder-coated finish
- 48-inch White Ash handle

thefirestore.com

\$66.59

7/Pulaski Fire Ax

Developed in the early 1900s by Edward Pulaski, a legendary Forest Service Ranger in Idaho, this is a traditional

bit axe blade on one end and a mattock blade for digging or scraping on the other end. The axe head is hydraulically seated onto the handle and secured with a serrated aluminum wedge. The serrated shape improves bite and the aluminum choice of material is strong, lightweight and does not change size with moisture content.

SPECIFICATIONS:

- Head weight: 3.75 pounds
- Handle length: 36 inches
- Handle material: Hickory
- Steel Hardness: 45-60

counciltool.com

\$75.85

8/Pro-Tech 8 Titan Gloves

The official glove of the Firefighter Combat Challenge offers enhanced protection, abrasion resistance and durability without sacrificing dexterity, comfort and fit. It features a seven-layer knuckle guard and a double-layer breathable polymer liner. Made with knitted Kevlar and Nomex. Available in short cuff or long cuff.

feldfire.com

\$88.95

9/Forestry Water Pump and Backpack

The 4000-BP Forestry Water Pump and Backpack is a 5-gallon (19 L) reservoir backpack that, along with a four-foot pick-up hose and the pressure nozzle will help extinguish hot spots and small flare-ups. The outer sleeve is made of super tough, engineering-grade polymer making it durable and lightweight.


timeemergency.com

\$189



urban.10.15

**“COULD YOU
RUN A MILE
OVER UNEVEN
TERRAIN WITH-
OUT STOPPING
OR COULD YOU
CLIMB A TREE
TO ESCAPE A
PREDATOR?”**



Stay Fit to Survive

PREPARATION FOR THE END OF TIMES ISN'T JUST A MENTAL GAME

Story by **Nikki Grey** | Photography by Robby Barthelmess

MANY OF US ARM OURSELVES WITH BUG-OUT BAGS, KNIVES, 'HAWKS, AND WATER PURIFIERS. We equip our cache of supplies with the latest gear to stave off death. We fill our minds with useful tips and tricks about fighting, weapons training and wilderness survival tasks. However, many don't realize it is also very important to ensure our bodies are fit for survival, too. Could you run a mile over uneven terrain without stopping or could you climb a tree to escape a predator? Could you lift a boulder to save an injured friend, or whatever else it could take, if it meant saving a life? Do you have the stamina to stay up all night to keep watch over a camp in siege, or can you carry five days of food, water, and other gear on your back while hiking into the unknown trail to rescue?

No? Well, then you've got work to do.

Even if you workout regularly, not all exercises are created equal when it comes to survival, says Dustin Alliano, founder, owner, and personal trainer at Superior Fitness Center in Santa Barbara, California. One look at Alliano's gym will tell you it's not your average fitness center. Along with the standard treadmills and other machines, the gym hosts a number of items you don't see in workout facilities as often, including rock climbing grips, cinder blocks, a sledgehammer, and a tractor tire. Although many gyms don't have these items, if you're looking to get your body in survival shape, you can find most of the equipment at various fitness sites, the personal trainer says.

To prepare your body for survival situations, Alliano recommends performing each of the following exercises three times a week. However, he says consult with a doctor before starting any physical fitness program.

10.15

ROPE

ROPE

For grip strengthening, hold yourself up off the ground by squeezing as hard as you can against a rope — not just holding on — for a 30-second set. Rest 15-20 seconds between each set and perform 10 sets per workout. (If you can't keep yourself suspended in the air, start with your feet on the ground leaning back at a 45-degree angle.)

"Don't get discouraged if you have to drop four or five times in the first 30 seconds. You have to start somewhere," Alliano says. When you are able to hold the position for 30 seconds at a time, work up until you reach 90-second sets. Don't move up to a higher time until you perfect the lower time without dropping.

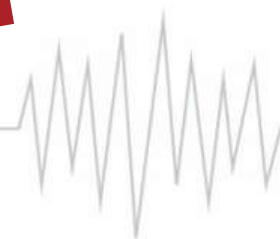
Alliano says hand and grip strengthening is especially important when it comes to survival. "If you're trying to climb over a ledge, if you're trying to lift something up, if you're trying to pull something, no matter how strong your back, chest or arms are, without the hand strength you're going to give out in seconds," Alliano says, citing that many strong people still can't climb a rope for this reason.



PIPE GRIP/BALL GRIP/ROCK CLIMBING GRIP

The pipe grip, ball grip, and rock climbing grip exercises are the same as the rope: Hold yourself up, by squeezing your hands against the grip. Do the same number of sets and rest in between.

GRIP



PINCH

PINCH GRIP (WITH BRICK)

Another grip strengthening exercise Alliano recommends is the pinch grip. For the pinch grip, he holds — by squeezing against it — either a 15-pound or 30-pound cinderblock off the ground, keeping his fingers straight.

"It's a little bit harder than a full grip," he says. "A lot of the other grip exercises were working hand and finger strength, but here my hand is not really on the brick much, just my fingers."

Begin with sets of 30 seconds, rest no more than 60 seconds in between, and do five sets, he says. "You work yourself up from 30 to 90, counting how many times you have to drop the brick, and then try to beat that time. So you don't move from 30 seconds to 60, until you can do 30 without dropping."

JUMP ROPE

Along with providing great cardiovascular and pulmonary conditioning, jumping rope, the trainer says, improves ankle stability and mobility, strengthens core, shoulders, and grip as you hold onto the rope. Alliano recommends jumping with a weighted rope, like his two-pound one.

"The goal is to work up to 10 minutes of jumping rope, without a pause, but you may have to work up to that by doing sets of 25 to 50, with minimal rest in between," he says.

JUMP

SWIMMING FOR YOUR LIFE

» IN ADDITION TO BEING GOOD EXERCISE, SWIMMING COULD SAVE YOUR LIFE.

Since the surface of our planet is mostly water, it would be wise to learn how to swim. It's especially important for people who live near water, flood-prone areas or for those who enjoy boating, says Laura Hamel of U.S. Masters Swimming, a nonprofit that provides members several benefits including offering events as well as support to swimming clubs and workout groups nationwide.

If you're in the water in survival mode — and you're fortunate enough to have the option of swimming to safety — not being a competent swimmer will make your situation more difficult, raising your odds of panicking and drowning.

"Strong, confident swimmers have less to worry about when they're in the water because they know what to do to get air, and they're comfortable having their faces in the water or holding their breath, exhaling under water, as needed," says Hamel, the communications and publications director for USMS. "Strong, confident swimmers also know how to rest in the water to conserve energy. When they get tired, they can flip over and float on their backs comfortably for a while."

She notes it's important to practice in local waters, rather than only pools, because it's different to swim in open water where you can't see the bottom.

"The only way to become a strong, confident swimmer is to do it regularly," says Hamel.

Many Master's programs offer learn-to-swim lessons. To see if there is one in your area, visit usms.org.



ADDITIONAL RECOMMENDED EXERCISES

- > Push-ups
- > Inverted pull-ups
- > Walking lunges
- > Stadiums

PLANK



FLIP

SPRINTS

If you're on a treadmill, "try running five to nine miles-per-hour, depending on your comfort level, in 15-second sprints, 25 of them with a 60-second stopping break in between.

"If you're in an emergency situation chances are you're not going to be running away for an hour," Alliano says. "Don't train for long distance running, but do sprints. If I need to run from a lion and climb up a tree or something, I'm probably going to have to do that in a minute or less otherwise that lion's going to catch me."

Sprints also condition the heart for adrenaline, the trainer says.

PLANK

The plank is a full-body workout, but it particularly strengthens the core – which could help you climb, Alliano says. It can be practiced on any flat surface.

"You want to make sure your shoulders are above your elbows, not behind. You want to stretch through your elbows into the floor that supports you, engaging your lats. Then you want to make sure your feet are together, on the balls of your feet, palms facing down on the ground. Your back should be flat not bent."

Alliano recommends performing a five-minute plank, three times a week.

"Set small goals, try to do 30 seconds at a time. You always do five minutes but you begin to track how many times you went down in that five-minute period," he says. "Once your form starts to go, don't sit there and struggle trying to sacrifice your form to get to that five minutes because if you sacrifice your form you'll never get the benefits."

Count how many times you drop and try to drop fewer times during the next workout, and fewer the next time, and so on.

TIRE FLIPPING

"Do 10 to 25 flips per set, and do five sets. Rest in between sets anywhere between 30 and 90 seconds, depending on your current level of conditioning."

Practicing moving a tractor tire can enable you to build strength to lift a large object, such as a boulder, without hurting yourself.

"When you go to squat you don't bend over at the waist," Alliano says. "You drop the hips down and back, keeping the weight on your heels, and then squat down. When you're about to lift, you put your hands around the tire, tighten your stomach muscles so you don't use your back only, and at the same time press through the legs and lift up, squeezing against the tire with your hands."

Alliano uses at 200-pound tire and says that for this exercise you want a tire that weighs no less than 100 pounds given that, because you are flipping the tire, you are probably only lifting about 65 percent of it.

SURVIVAL AT 29,000 FEET

» After former Navy rescue swimmer Brian Dickinson found himself alone and snowblind at the top of Mount Everest in May 2011, Dickinson had to rely on his training and physical fitness to get back to safety.

At the time, Dickinson was 36 years old; it was about 12 years after he was honorably discharged from the military.

He hadn't planned to climb alone; his Sherpa became ill at around 1,000 feet from the summit and turned back. Dickinson took stock of his situation and thought he could safely make it to

the top alone, which, which he did, but soon after he started descent, snowblindness struck. Dickinson had been physically prepared to climb the mountain, but not to have blurry vision and burning eyes, without anyone to help him, while doing it.

"It was really just one step in front of the other, just never giving up," Dickinson says of how he kept pushing forward for the seven-hour trip from the summit to the high camp, which typically would take about three hours. "In survival situations, really the most important thing is your mental focus, because if you lose the will to survive nothing is going to save you. I was doing everything in my power; I was going to continue



PHOTO BY BRIAN DICKINSON

Brian Dickinson, pictured here on Mount Everest, relied on his previous military survival training when he found himself alone and snowblind on top of the highest mountain in the world.

moving no matter how tired and how frustrated I was."

Dickinson, who details his survival story in his 2014 book *Blind Descent* (Tyndale), suggests people train for survival situations by

seeking scenarios that would normally cause panic.

"In my training in the military, we had people basically trying to drown us daily; we were pushed to the limit," he says, noting people should step outside of their comfort zones.

"I'm not saying go way beyond that, but push a little to see what your capable of ... In some scenarios it's going to be forced on you and if you do panic, potentially the worst can happen," he says.

"Know your limitations and push beyond that."

And don't forget: Focus is key. "There's only so much in front of you that you can control. All that other clutter, letting that in, is going to influence you negatively.

SLEDGEHAMMER

Hitting a sledgehammer against a tractor tire is a good way to practice using a tool, such as a large stick, to break through something. This exercise incorporates a biceps curl, shoulder press, core rotation, a medicine ball slam, an ab crunch and a body weight squat all in one, Alliano says.

"I do about 25 each arm until I get to 100, then I'll rest for 90 seconds and do it again, five more times (sets)."

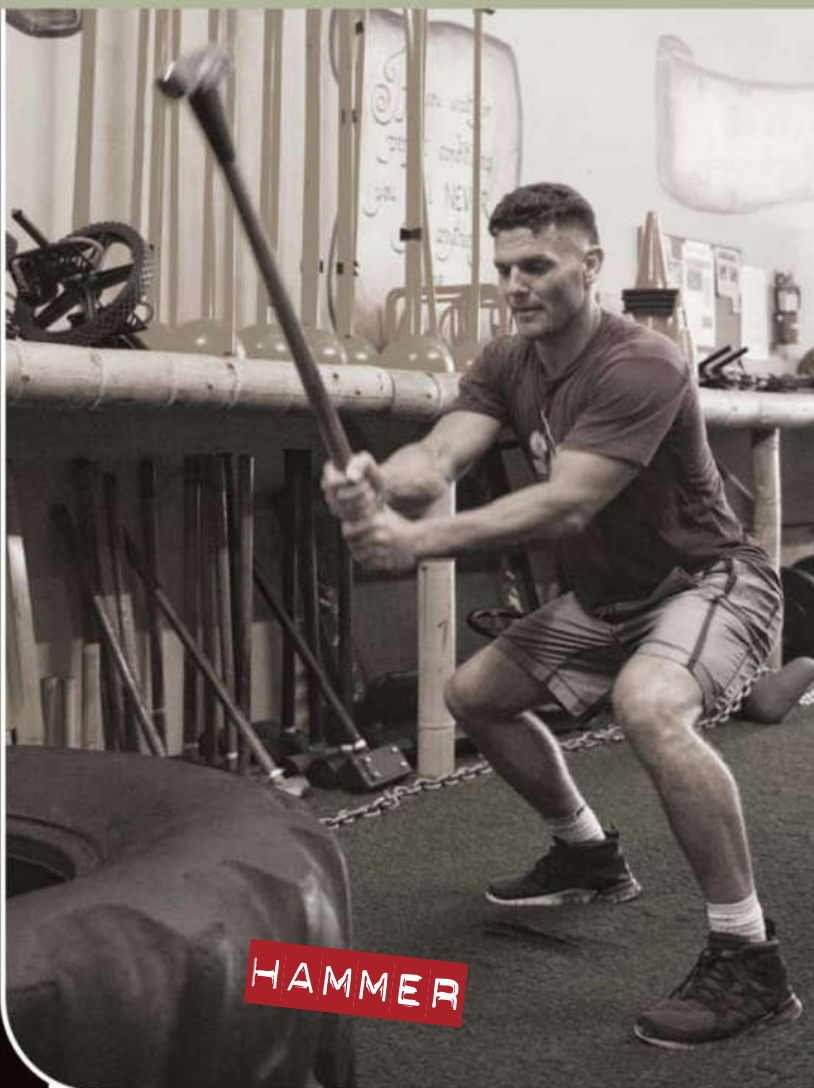
BURPEES

"If you want to get your body in shape in a relatively short amount of time, improve your conditioning and basic strength and you have no equipment at your disposal, burpees are one of my favorite workouts."

(The trainer says there are many variations to the burpee, but the following is how he does it.) To perform a burpee, start in an upright position, and then squat down to the ground, with your hands on the ground like you're going into a pushup position. Next, jump your feet back together, keeping your stomach tight to avoid injuring your back, so you're in an arm-extended plank position. Then do a push-up, keeping the elbows to the side of the body. Next, jump your feet outside of your hands; contract your abs while lifting your torso back to upright position (which is key for not fatiguing and overusing your back muscles), and then extend your arms up into the sky. Repeat process 10 to 25 repetitions at a time.

"Try to start doing 10 at a time with as much rest needed in between, up until 100. Always do 100 three days a week." ■■■

SOURCE: superiorfitnesscenter.com



how-to.10.15

Going Dutch

Story by **Steven Paul Barlow**
Photography by Stephanie Barlow



PHOTO BY ALEXANDER RUBTSOV / GETTY IMAGES

A large, dark metal pot is positioned over a campfire. The pot is filled with a thick, light-colored soup or stew, topped with small pieces of red and green vegetables. The fire is burning brightly, with orange and yellow flames visible at the bottom of the frame. The background is a blurred, natural setting with rocks and foliage.

COOK ANYTHING IN AN INCONVENIENT SITUATION

AN EARTHQUAKE HAS ALL BUT LEVELED YOUR HOUSE. The upstairs guest bedroom is now in the downstairs kitchen. There's no electricity, no gas, and no chance you'll occupy your house anytime soon. Since the destruction is localized to a few cities, the state government is mobilizing, which means you'll be several days without many of the amenities we hold dear in life. Regardless of the situation, you still have to eat, and not every survival situation calls for eating bugs and bark on Day One.

For those times when you have a good food supply but not a conventional kitchen, you don't necessarily have to resort to cooking lizards on a stick. Consider cooking them in a Dutch oven. There are many kitchen pots labeled as Dutch ovens, but the true ovens are the cast iron kettles designed for fireside cooking with three stout legs on the bottom that enable you to place these kettles directly into the coals. Their lids have a raised lip around the edge to contain the coals that you place on top, allowing you to surround your oven with heat.

While these cast iron Dutch ovens are rather large and heavy to be toting across the countryside, they are ideal for both base camps and backyards, if you find your kitchen obliterated and you have to set up a temporary homestead on the grass in the backyard.

A big part of surviving extended emergency situations is being able to maintain morale. Eating tasty, nutritious meals as good as what you'd be eating under normal conditions can help keep everyone's spirits up.

***"...YOU'LL DISCOVER
THE POSSIBILITIES
FOR SUPERB MEALS
OUTDOORS ARE
ENDLESS."***

The complete kitchen anywhere. No civilization? No problem. With a Dutch oven and a few accessories, you can have home-cooked meals away from home.

“...ANYTHING THAT WILL FIT INTO THE KETTLE YOU CAN COOK AS IF IT WAS PLACED IN YOUR OWN KITCHEN OVEN AT HOME.”

6 ADVANTAGES of a Dutch Oven

1 Dutch ovens are versatile. Use them to bake cakes and casseroles, biscuits and beef, main dishes and desserts. Basically, anything that will fit into the kettle you can cook as if it was placed in your own kitchen oven at home. You can even invert the lid to use that as a frying pan. The cast iron heats evenly and retains that heat.

2 Cook anywhere. You can use Dutch ovens in your kitchen at home. During power outages, you can cook with them in your fireplace. Outside, you can cook with them over charcoal or wood coals — anywhere you can build a fire. You can suspend them over fire or place them on a grill, but most of the time you'll be placing them directly into the coals.

3 Properly cared for, these cast iron kettles will be around for your great-grandchildren to prepare their venison stew and turkey chili recipes. They're the same type the pioneers brought with them as they traveled west. They have been around for hundreds of years and were often handed down as family heirlooms from one generation to the next.

4 Cleanup in the field is easy. The more you cook with a Dutch oven, the more your greasy gravy sinks into the porous cast iron and “seasons” it, helping to give it a dark, protective non-stick surface.

When you're done cooking, simply wipe and rinse away any food particles. When the kettle's dry, apply a thin coating of vegetable oil to keep it from rusting. There's no need to worry about germs. All of the little bugs will be killed the next time you heat your kettle.

5 There's a size to fit every need. The 12-inch, six-quart Dutch oven is the most common. But they come in many sizes larger and smaller. It's often nice to have different sizes on hand to suit all of your cooking needs.

6 Double-Decker Dutch. You can cook with two Dutch ovens stacked one on top of the other, allowing you to use fewer coals. Prepare your main dish in one and your dessert in the other. Because they retain heat so well, your dessert will still be warm when you're ready for it.



A charcoal lighter basket allows you to get your charcoal started without lighter fluid. Just light some crumpled newspaper or other tinder in the bottom.

GETTING STARTED

Start with simple recipes, but don't be afraid to experiment. The trickiest thing is learning to regulate the heat. Different types of wood can burn at different temperatures and rates. For that reason, it's easiest to start with charcoal as your heat source. With charcoal, you can count the number of same-sized briquettes below and on top of your stove so you're cooking at a consistent temperature.

A common mistake is to use too much heat. According to Lodge Manufacturing, one of the leading makers of Dutch ovens, eight briquettes underneath and 17 on the lid should bring your 12-inch oven to 350 degrees.

That's a good place to start, but you might still have to experiment due to differences in the charcoal you're using and the outside air temperatures and wind conditions. If there is wind, it can double necessary cooking times, so it's best to choose a sheltered location.

Dutch ovens heat very evenly, but your coals have to be distributed evenly as well. It's a good idea to rotate the oven clockwise 90 degrees and the lid counterclockwise 90 degrees every 15 minutes or so to ensure even cooking.



(left) From cakes to casseroles, anything that will fit into your Dutch oven can be on the menu tonight. Here a chicken with rice and vegetables dish is being prepared.

(below) You place the Dutch oven directly over the coals and then add coals atop the lid so that heat surrounds your kettle as in a conventional oven.



Tools of the Trade

You don't need a lot of extras to get started in Dutch oven cooking. You can add to your accessories over time. Here are some handy things to have:

Gloves — Thick leather gloves are a good idea when it comes to moving hot cast iron.

Lid Lifter — Because you often place hot coals on the lid of your Dutch oven, a lid lifter is a convenient and safe way to remove the lid without burning yourself or spilling hot coals into your meal.

Lid Stand — This allows you a safe place to set your lid while you check your meal. As an alternative way to cook, you can place the stand in the coals and place the lid upside down on top of it. The inverted lid makes a nice frying pan for such things as eggs and pancakes.

Barbecue Tongs — These allow you to safely move coals around or place them on your Dutch oven's lid without getting your fingers too close to the heat.

Pan Scraper — A plastic pan scraper can help you to remove stubborn food when you're cleaning your Dutch oven. This is especially useful when you are first learning to regulate the heat to your oven and you end up with food stuck to the sides or bottom of the oven.

Round Cake Pan — This is especially useful for baking in your oven.

Round Cooling Tray — Use this in the bottom of your oven to steam vegetables or to support your cake pan within the oven.

Charcoal Lighter Basket — This is a fast, easy device for lighting charcoal without using lighter fluid.

Disposable Dutch Oven Liners — These aluminum liners will help to keep the inside of your oven clean and will help to protect the seasoning when cooking acidic foods.

Carry or Tote Bag — These are designed to protect your oven while transporting it.

Tripod — Use this to hang your oven over the fire to use it as a conventional cook pot.

Cooking Table — This is the ultimate in civilized cooking outdoors. On such a table you can cook with your oven at waste level without ever having to bend over to tend to your coals.



Double-decker Dutch.
You can stack your Dutch ovens, using fewer coals to cook your main course and dessert at once.

“NEVER POUR COLD WATER INTO A HOT OVEN.”

CAKE PANS AND COOLING RACKS

Although you can cook any foods directly in your oven, sometimes it's good to use a separate pan placed inside the oven. You can place a round cooling tray normally used for pies in the bottom of your oven. For a 12-inch oven, use a nine-inch round cake pan placed on top of that tray.

Cooking your food inside a cake pan within your oven is a good idea when baking cakes and biscuits or when you don't want to worry about cleaning the oven afterward. When your food is done, simply use a pan lifter to lift the cake pan out. The inside of your oven should still be clean.

10.15

Cast Iron Recipes Made Easy

Once you're familiar with the basics of Dutch oven cooking, you're limited only by your imagination when it comes to easily prepared meals outdoors. Here are a couple of recipes to get you started:

Chicken, Rice and Vegetables

- 3 cups white rice
- 3 cups water
- 3 cans cream of chicken soup
- 1 frozen 1-lb package of mixed vegetables
- Five to six chicken boneless chicken breasts
- 1½ lbs of shredded cheese
- Seasonings (Old Bay or other) to taste

Place water, rice, soup, vegetables in bottom of 12-inch Dutch oven. Arrange chicken on top. Sprinkle seasonings on chicken. Bake at 350 degrees for 45 minutes. Sprinkle cheese on top and cook for an additional 15 minutes or until cheese is melted.

Strawberry Rhubarb Cobbler

- 4 cups sliced fresh strawberries
- 3 cups sliced fresh rhubarb
- ½ cup quick tapioca
- 2 cups sugar
- 1 yellow cake mix

Mix strawberries, rhubarb, tapioca and sugar in a bowl. Let stand in refrigerator for several hours. Pour into 12-inch Dutch oven. Sprinkle dry cake mix evenly over top. Bake at 350 degrees for 45 minutes to 1 hour until cake mix appears to be cooked.



(above) Placing a round cake pan on a cooling rack inside your oven allows you to bake cakes and biscuits while keeping the oven itself clean.

(right and below) A lid lifter is a metal tool that enables you to lift the hot lid off of your oven safely to check on your meal without spilling the hot coals into your food. A lid stand provides a safe place to put the hot lid of your oven. You can also put the stand in the coals and use your inverted lid as a frying pan for eggs and pancakes.



CAST IRON MAINTENANCE

To protect your Dutch oven's seasoning, which provides its non-stick surface and some protection against rust, never scrub your oven with a metal scouring pad or steel wool the way you would a stainless steel pot.

Heat water in your oven to loosen any food that's sticking and use a thin plastic scraper if necessary. Never pour cold water into a hot oven.

Acidic foods, such as tomato sauce and baked beans, tend to deteriorate the oven's seasoning, so after using your oven to prepare such foods, you might have to re-season it. Thankfully, this is an easy process.

To re-season your oven, coat it inside and out with a thin coat of vegetable shortening, such as Crisco. Don't use too much because you don't want it to catch fire. Bake your oven on a rack for about an hour and your seasoning will be restored. ■■■

Top Picks for Cast Iron Dutch Ovens

The easiest way to get started in Dutch oven cooking is to purchase cast iron ovens that have already been seasoned. Here are some good choices:

Lodge: lodgemfg.com

Stansport: stansport.com

Camp Chef: campchef.com

Texsport: texsport.com

Old Mountain: oldmountainllc.com

Coleman: coleman.com

Bayou Classic: thebayou.com



how-to.10.15



On Top *of* Your Game

QUICK AND PROPER CARE OF YOUR QUARRY IS VITAL TO SURVIVAL

Story and Photography by **Dana Benner** | Additional Photography by Guy Spangenberg | Illustrations by Tris Mast

PHOTO BY DON JOHNSTON / GETTY IMAGES

A

AFTER THE FOOD RUNS OUT, after the stores are littered with barren shelves, and after you've desperately decimated every last scrap of edible produce from your dying garden, it is time to branch out by returning to your ancient roots as a hunter/gatherer. Regardless of what man wrought on itself, most calamities — man-made or otherwise — will, more or less, not affect the indigenous animal populations. Hopefully, a short foray into your local mountains or fields will produce a variety of game, all ripe for harvesting, from deer, rabbit, and squirrel to bear, moose, and elk. However, pulling the trigger is the easy part. Then what?

Whether you harvest game to feed your family or you are in an emergency survival situation, how you prepare the game that you secure could mean life or death. It doesn't matter if the game is a moose or a mouse; what you do after the hunt is very important, because improperly prepared game leaves you and your family open to bacterial infections, some of which can be very dangerous if not fatal.



***"IT DOESN'T MATTER IF
THE GAME IS A MOOSE
OR A MOUSE; WHAT YOU
DO AFTER THE HUNT IS
VERY IMPORTANT..."***



After the deer is down and the excitement of the hunt is over, the next steps are crucial to the safety of the meat.

POSITIONING THE DEER

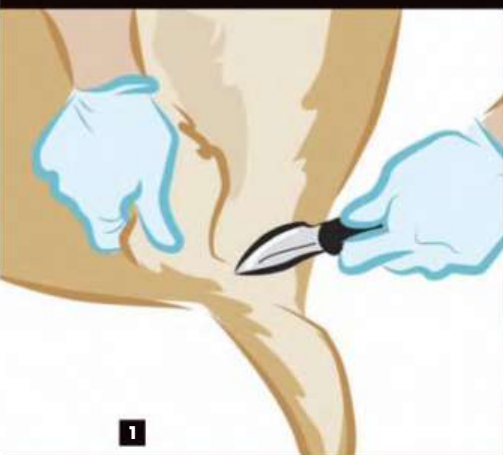
Before you begin to field dress the animal, scan your surroundings for anything that may aid you in this task. In the case of large animals (like a deer), gravity is your friend. If possible, hoist up the deer head first from a strong branch of a tree. This allows the weight of the internal organs to work in your favor. If this is not available, try to position the deer on a downward slope with the head pointing uphill. If on the ground, position the carcass on its back and use rocks or logs to help keep it stable.

Use a very sharp, thick-bladed fixed knife (ideally, it should have a gut blade). A huge "Rambo"-style knife to field dress anything smaller than a moose or an elk isn't necessary, and, of course, the smaller the animal, the smaller the knife will need to be.

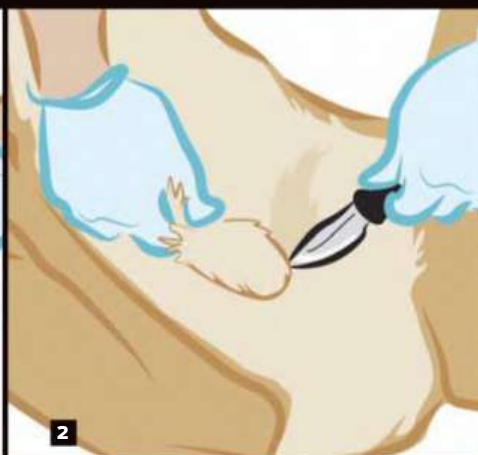
FIRST INCISION

There are two schools of thought on which direction to start, either from the pelvic area going up or from the chest area going down.

Tom Flynn, Program Manager at Owl Brook Hunter Education Center in Holderness, N.H., starts at the chest cavity and works down to the pelvic area. His reasoning is that because he is working in the direction that the hair was growing he will get less hair on the meat while cutting. However, cutting from the pelvic region and going up to the chest opens up the stomach cavity quicker, exposing the internal organs and allowing more heat to escape. It also makes it easier to avoid piercing the stomach, bladder, and/or colon.



1



2



3

STEP 1

Cut around the anus. Be very careful to prevent any spillage. All you are doing is loosening up these organs to be removed later (as they are still connected to the colon).

STEP 2

On a buck, make two incisions on either side of the penis and scrotum. Those cut lines should follow the inside of the pelvis down to the incisions made around the anus. Pull the scrotum and penis downward as you

slice them off and discard them along with the anus.

Cutting out the anus keeps the bladder intact but allows a clear path for the removal of the organs. Also, remove the scrotum for the same reason, but check with your local laws, as some agencies require the scrotum to remain when recording your deer.

Make a few slices right in the middle of the pelvis. It relaxes the tension on the legs, allowing more access to the underside of the deer.

STEP 3

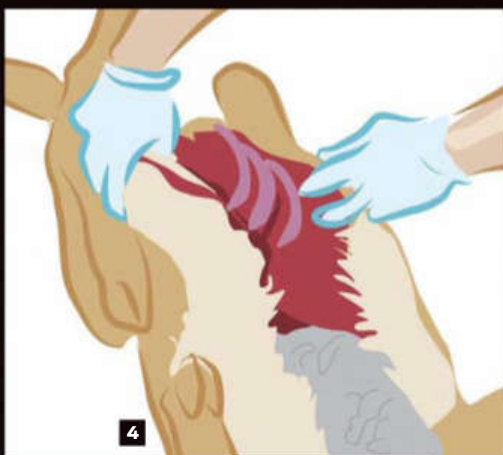
Making a slice through the thin muscle wall right above where the penis/scrotum were, make a shallow cut through the skin to the breastbone. Next, placing your index finger inside the cavity created between the skin and the intestines, slowly guide your knife up to prevent it from accidentally cutting into any organs. Some people like to cut all of the way up across the breastbone to the jaw. All you want to do is field dress the deer. All of the other cuts will be made during skinning and processing.

Owl Brook Hunter Education Center

»Many states offer education programs to the state's hunters, fishermen and women, and trappers with the thought being that an educated outdoorsperson is a safe one. With that in mind the New Hampshire Fish and Game Department's Education Division operates Owl Brook Hunter Education Center in Holderness, New Hampshire.

Throughout the year the Center offers a variety of programs, many of which are free of charge, in everything from large game processing and hunter safety courses to workshops on map and compass reading and trapper education. During the summer months the Center offers day programs for youths (ages 10-15) which teach young people about the shooting sports, archery and other outdoor skills.

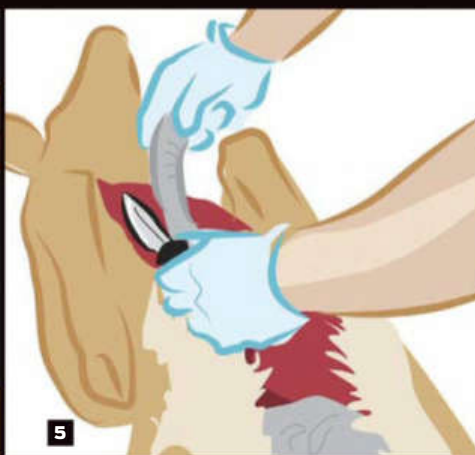
You don't need to be a hunter to take advantage of what the Center has to offer. There are plenty of workshops on outdoor survival, wildlife tracking and identification and others. All of these programs are taught by experts and are open to the public, though registration is required for many of them.



4

STEP 4

Consider switching to a heavier knife for the breastbone. If your knife is sharp enough, it will easily slice through the bone, exposing the lungs, heart, and throat. At the base of the throat will be the trachea and esophagus.



5

STEP 5

Now move to the chest cavity. Reach up inside the cavity and grab the trachea. Carefully cut both the trachea and the esophagus as far up the neck as you can. Work slowly as you will be doing this by feel. After this, put your knife down and reach inside once again and with both hands, grab the trachea and pull hard.



6

STEP 6

Returning to the chest cavity, spread open the ribs and notice between the bottom of the lungs and the top of the stomach is this meaty diaphragm, which looks like a thin wall separating the two cavities. Slice that away from the bottom of the rib cage all the way around to the back of the deer.



The Next Step: Game Processing Tips

By Dana Benner



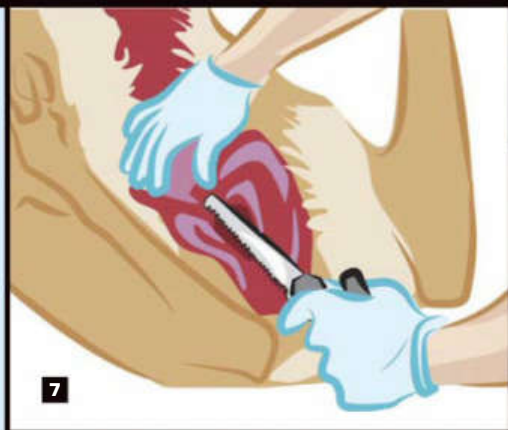
» A wise Native Elder once told me, “Everyone knows something, but nobody knows everything. We are always learning. If you are not learning you are either dead or a fool.” I have spent most of my life living from what Mother Nature provides, but I am the first to admit that there are things I’m not good at. One of those things is the butchering of large game; in my area that means deer, moose, and bear.

Rick Warbin, instructor from the Black River Deer Farm in Wentworth, N.H., points out that very sharp knives will make your job a lot easier. As well, stop often during the butchering process to sharpen those knives if possible.

“Take your time and do it right,” he said numerous times during the game processing workshop he conducts at his shop. Moving too fast sometimes leads to accidents and to wasting meat.

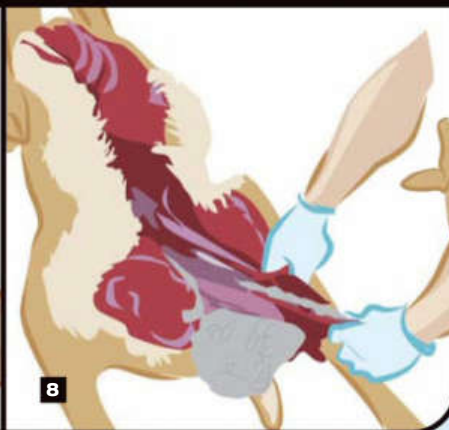
“If it takes you three hours or three days to properly butcher your deer, who cares? Just do it right,” Rick said.

He also pointed out that proper aging of the meat is vital to good cuts, but what is proper aging? Certain cuts can be taken sooner than later and this is where years of experience come into play.



STEP 7 (OPTIONAL)

On the other side of the pelvic bone is the bladder and colon. If you’ve been careful they shouldn’t have ruptured. With your hand, reach in and pull up the bladder so it is out of the way, and then slice through the pelvic bone. It might take some sawing (with a saw blade), but be careful as you are working close to the bladder. Splitting apart the pelvic bone will allow the deer to be laid wide open, which will make removing the guts very easy. This is an optional step, however, as you can merely scoop out the guts or turn the deer slightly on its side.

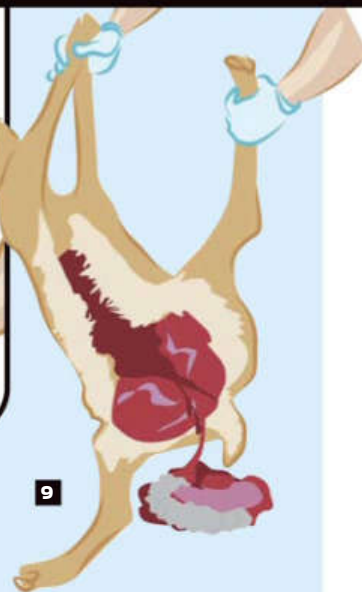


STEP 8

At this point most of the internal organs should break free and come out easily. With your hands, grab the esophagus and start to tug the organs toward the pelvis. You might have to cut more of the diaphragm as you go. Double check to make sure you have removed them all.

STEP 9

If on the ground, roll the carcass to either side and spread its four legs apart to help drain out the blood and other body fluids.



Any spillage from the bladder, intestines, or stomach should be wiped out with a rag, paper towels, or even dry grass. Do not use the water from a nearby brook or stream as it may contain bacteria. The rule of thumb is if you won’t drink it, don’t rinse your deer with it. If there is clean snow on the ground, pack the animal’s cavity open with it. Otherwise prop the cavity open with a stick to cool it down.

Bacteria, Temperature and Skin Safety

»Many people fail to realize the potential risks involved with cleaning any wild game. Most diseases carried by animals are found in the blood and when field dressing game there is always going to be plenty of blood. Protect yourself from harmful bacteria and other pathogens.

Skin: While your skin will protect you a great deal, any cuts or open wounds you may have, no matter how small, need to be well protected. For this reason I always carry a couple pairs of disposable plastic gloves. Don't have any? Wrap your hands in plastic or work through plastic bags.

Bacteria: There is always the risk of contaminating the meat while field dressing the animal. There are many pathogens that live in the intestinal tracts of all warm-blooded animals, and if the animal is improperly dressed (i.e. the stomach, bladder, or colon is pierced), then these bacteria can get into the meat, thus making it a health risk to eat.

Temperature: The warmer the meat is, the quicker that bacteria will set in and the quicker the meat will start to spoil. Field dressing the removal of internal organs is the quickest way to cool down the animal's body temperature. Once the organs are removed, propping the body open with a stick or packing it with snow or ice will cool it faster.



"IN THAT DEER'S HONOR, YOU'LL SURVIVE ANOTHER DAY."

FINISHING UP

Your deer is now field dressed and ready to be dragged out for skinning and final processing. Though many hunters take their deer to professional butchers for these next steps, they can be done at home or at your camp. Whether you do it yourself or have someone else do it, it is a long process requiring sharp knives and much skill.

You owe it to the animal to get the most meat from your kill as you can and this all starts with the proper field dressing of the kill. Proper processing is vital for those times when hunting is a recreation, but in dire times of survival, cut off a slab of meat and toss it on the coals until charred to your liking.

In that deer's honor, you'll survive another day. **AAA**

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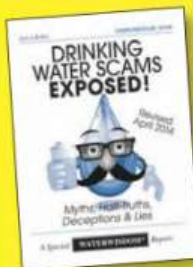
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Cleaning Smaller Game

» Maybe you're not the best hunter in the world or maybe all of the larger game has been hunted out in your area, so you'll have to resort to smaller animals, like rabbits and squirrels. The process in gutting and preparing a squirrel, for example, is very similar to that of a deer, just with smaller parts and slightly smaller tools.

> Step 1: Gather your materials. An ideal list includes a knife, a pair of pliers, a pair of scissors, and a bucket, but you can get by with just a knife and a bucket for scraps. If you're in a survival situation, only a knife is needed.

> Step 2: Cut off its paws. When cutting off the front paws, cut as close to the actual paw as possible. When cutting off the back paws, cut right after the carpal pad (the black pad on the back side of the paw). Discard them into the bucket.

> Step 3: Skin it. Lay your squirrel belly down. Fold its tail over its back so that you can see its anus. Use your knife to cut completely through the bottom of the tail. Make sure you cut at the very bottom so you don't actually sever the tail from the body, because you need the tail to still be attached by the skin that covers its back. Your cut should have exposed the flesh at the very bottom of the back of the squirrel.

From there, hold your squirrel by the legs so that its head is facing the

ground. Place the tail under one of your feet and step on it as hard as you can. Pull the back legs upward, removing skin from flesh. The skin isn't going to completely detach. Hopefully, at this point, you will be looking at a skinless squirrel from the belly up, with the skin dangling from the head of the squirrel. Leave the tail under your foot. Then either use a pair of pliers or your hands to pull the belly skin off. Pull until not only the belly skin has peeled away, but so has the skin on its back legs. The skin will not detach here either.

> Step 4: Cut off the head and legs. Cut the entire head off, taking the dangling skin along with it. This is important because while it is best to eat every part of the animal that you can, recently there have been squirrels found with brain disease. As for the legs, cut off as little as possible. We're only doing this to get rid of the skin but want to preserve as much meat as we can.

> Step 5: Cut off its genitals (if it's a male). If you've caught a male squirrel a good way to tell the age is to look at its testicles. The more hair there is on the testicles, the younger they are. If the testicles are larger and hairless, they're older. In any case, cut off its testicles and penis.

> Step 6: Gut it. Use your knife (or scissors if you have them) and cut straight up the stomach, starting at the navel. Cut through the ribs and out through the neck. Lay the squirrel on its back and pull out every intestine you find. The heart, lungs, liver, and kidneys are all edible, so save those.

> Step 7: Wash it out with safe, purified water. Make sure it is nice and clean and empty of blood.

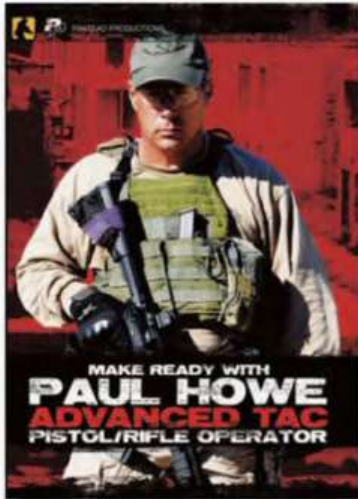
> Step 8: Dispose of the parts you aren't going to use. Throw them as far away from camp as you can. You can even throw them in the river; fish will eat them.





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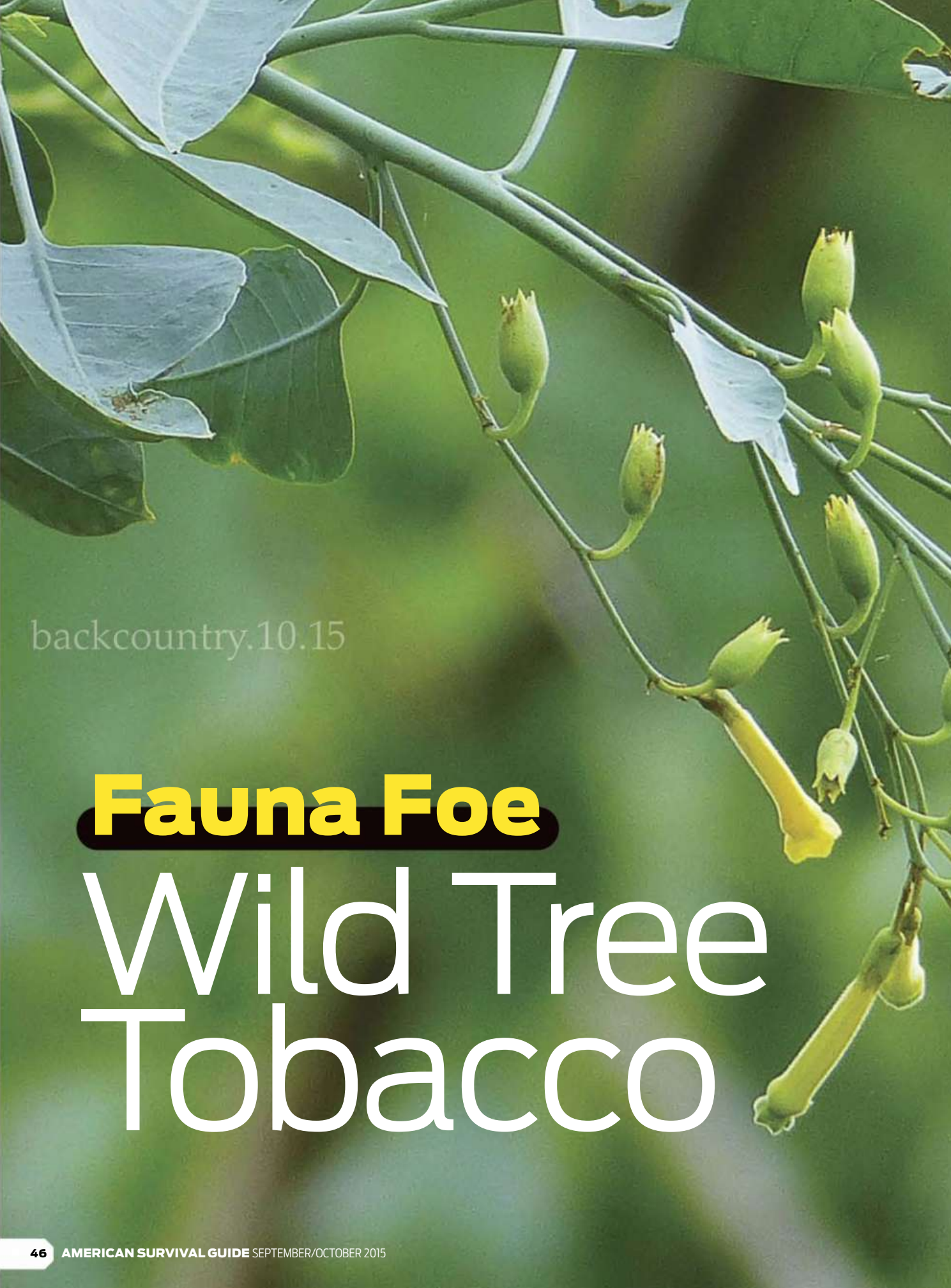
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Fauna Foe Wild Tree Tobacco


EAT THIS POISONOUS PLANT AND YOU MAY DIE

Story by **Christopher Nyerges** and **Rick Adams**

Several years ago, a man in Los Angeles County planted some collard seeds in his backyard. He lived not far from the hilly country of the Angeles National Forest, and when his plants came up, he picked, cooked, and ate them like collard greens that he remembered from his childhood in the South. Immediately, he became severely ill but managed to get to the hospital where they pumped his stomach.

Later, he took some of the plants to a nearby nature center, and he learned that the plants which grew in his collard patch were actually tree tobacco, which were likely dropped into his yard by birds or rodents. The new growth of tree tobacco does bear a resemblance to collard greens, so this man's mistake was somewhat understandable.

Fortunately, he lived.



The most common tobacco in the west and southwest is *Nicotiana glauca*, commonly called tree tobacco. It was introduced into California by the Spanish missionaries from Bolivia, Argentina, and Paraguay.



WILD TOBACCO IS EVERYWHERE

During the Clinton administration, there was idle talk of trying to make tobacco illegal, like a modern-day prohibition. My botany friends and I laughed at this silly idea. Even if the government managed to eradicate the tobacco companies, we knew there would still be plenty of tobacco everywhere, as there are various tobacco plants growing wild all over the country.

The most common tobacco in the west and southwest is *Nicotiana glauca*, commonly called tree tobacco or Indian tobacco. It's a member of the Nightshade family and not a native of the U.S., but was introduced first into California by the Spanish missionaries from Bolivia, Argentina, and Paraguay.

Tree tobacco grows large and tall, almost tree-like with its large bluish-green waxy leaves and yellow tubular flowers. This South America native is now found along the flood beds of streams, along trails, and the least hospitable arid wasteland areas all over the

The tree tobacco plant, like this young one, grows in the most inhospitable places, found easily in culverts, dried stream beds, and in the gardens of people who enjoy its bright yellow flowers.

**“ALL PARTS
OF THE TREE
TOBACCO ARE
POISONOUS.
IT IS DEADLY
TO EAT ANY
PART OF
THIS PLANT.”**

SMOKING AND MEDICINAL USES

Even though you should never eat any part of the tree tobacco, there are a few good uses for the plant.

Smoking: The tree tobacco, closely related to commercial tobacco, has been used as a ceremonial smoke by Native Americans for hundreds of years. Though not the native tobacco, the tree tobacco leaves were sometimes smoked, sometimes mixed with the leaves of the bearberry, *Arctostaphylos uva-ursi*, as well as the leaves of another manzanita, probably *Arctostaphylos patula*.

According to Edward K. Balls, author of *Early Uses of California Plants*, “Smoking was really more a ‘cult,’ particularly among the tribes of the lower Klamath area. In the Karok economy, smoking was not practiced for pleasure but always for some definite end: as a part of the day’s routine, or as a rite prescribed by the tribal customs.”

During my field trips with school children, one will invariably ask, “How can you smoke this tree tobacco if eating it will kill you?” I tell them that eating the plant kills you within a few hours, whereas smoking it kills you slowly.

Medicinal Uses: Edward K. Balls adds that the tree tobacco leaves were also used medicinally. “The leaves were supposed to be good steamed and used as a poultice to relieve a swollen throat, and steamed into the body for those suffering from rheumatism,” he explains.

A poultice made from the leaves of this plant was occasionally used as a painkiller on cuts and was applied to a rattlesnake bite after an attempt had been made to suck out the venom.

Other Uses: A dense tea brewed from the tree tobacco leaves can be used as an insect repellent and can be sprayed directly onto roses, vegetables, and animal pens and cages. This works great to get rid of aphids. Cook an ample concentration of fresh leaves in water in a big (covered) pot until there is a brown tea. Let cool, then strain and spray on your plants. You might wish to add a biodegradable liquid detergent to the tobacco tea so it will better adhere to the foliage.


southwestern and western United States. It is also readily cultivated in gardens, especially by people who grow them, because the yellow tubular flowers attract hummingbirds.

The ovoid leaves are entire (not toothed), glabrous (not hairy), bluish green, and alternately arranged. The leaves of the new young plant are extremely large, sometimes up to two feet in length, although the average length of a leaf, however, is approximately six inches. As the plant matures, the leaves become much smaller — from one inch to three inches.

WHY IS IT POISONOUS?

All parts of the tree tobacco are poisonous. It is deadly to eat any part of this plant. Poisonings occur most often with the new growth of the tree tobacco plant, well before any flowers have formed. If tree tobacco is eaten, it can cause vomiting, stomach pains, diarrhea, general weakness, irregular pulse, shaking, convulsion of muscles, and even death.

Although tree tobacco does contain about one percent nicotine, it also has about 10 percent of anabasine, the alkaloid found in its leaves, stems and flowers. This alkaloid has been linked to birth defects in cows, pigs, and sheep who graze on the plant.

According to Dr. James Adams, co-author of *Healing with Medicinal Plants of the West*, "Anabasine is a compound similar in structure and activity to nicotine, but more toxic in terms of seizure induction. As few as three leaves of *Nicotiana glauca* can be fatal." 



(left) The ovoid leaves are entire (not toothed), glabrous (not hairy), bluish green, and alternately arranged. The leaves of the new young plant are extremely large.

(above) The attractive yellow flowers are a favorite among hummingbirds and bees, which helps spread the plant far and wide. As pretty as its flowers are and as innocent as its leaves look, never eat this plant!



Pokeweed's leaves are similar to those of the tree tobacco, and although the pokeweed can be consumed (with preparation), it is still very toxic, like the tree tobacco.

Tree Tobacco vs. Pokeweed

»People from the southern states, and from Mexico, may be accustomed to eating the cooked greens of pokeweed (*Phytolacca americana*). Pokeweed is a toxic plant with water-soluble toxins, and is never consumed raw. The young greens are boiled, the water discarded, and the greens are cooked again. The toxin in pokeweed is water-soluble, so the greens are then safe to eat. In fact, pokeweed is a longtime traditional southern food, but everyone who eats it knows that you have to cook it first. When some of these folks move out to the western states and see young tree tobacco, they periodically confuse the two.

In fact, the overall appearance of young pokeweed and young tree tobacco is very similar. However, pokeweed's leaves are glossy green, whereas tree tobacco's leaves are bluish-green, and almost waxy. As each plant matures, they begin to look very different. Pokeweed, with its bright, glossy-green leaves, is uncommon in the southwestern and western United States where tree tobacco is found. The mature pokeweed's stalk turns bright violet, unlike that of the tree tobacco, which remains bluish-green.

FULL CIRCLE




HOLLOW-HANDLE KNIVES REVISITED

Story and Photography by Kevin Estrella

REMEMBER THE '80S? IT WAS A DECADE FILLED WITH THE SMELL OF AQUANET HAIR-SPRAY, THE SOUNDS OF SYNTHESIZED ROCK SONGS AND ACTION MOVIES WITH STARS LIKE SCHWARZENEGGER, VAN DAMME AND STALLONE. IT WAS A DECADE OF EXCESS AND OVER-THE-TOP CULTURE. FOR THE KNIFE CARRYING OUTDOORSMAN, THE '80S ALSO WAS MARKED WITH A DISTINCT STYLE OF BLADES THAT FLOODED THE SPORTING GOODS MARKET, THE HOLLOW-HANDLE SURVIVAL KNIFE. THESE KNIVES WERE THE ULTIMATE SURVIVAL TOOLS IN THE HANDS OF HOLLYWOOD ACTION STARS. BUT, JUST AS THE '80S CAME TO PASS, SO DID THE TREND OF SO CALLED "RAMBO" KNIVES AND THOSE WITH HOLLOW HANDLES.

The Martin Knives MCE2 design draws heavily from the Lile knife used in the movie *First Blood*.




Unwrapped, the MCE2 has a knurled grip. The cordage used is untarred #36 bank line.

WHY NOW?

For years, cheap hollow-handle knives were found everywhere from flea markets to discount knife catalogs to budget camping stores. Even now they are still found in countless online knife store inventories as the novelty of owning one never truly went away. These mass-produced blades regularly broke or disjoined at the hilt, were made from inferior materials, had questionable construction with single roll pins holding the tang in place, and were not well suited for actual outdoor use.

Only a handful of knife makers continued to make quality hollow-handle blades like Lile, Randall, and Martin Knives. Recently, I was discussing the modern hollow-handle knife with Hank Martin of Martin Knives and after hearing about the solutions his company discovered to common hollow-handle problems, I became intrigued.

I figured it was time to revisit the idea and wanted to treat the hollow handle blades available to me like those of full-exposed tang construction. Has modern manufacturing addressed the stereotypical problems of lesser quality blades? Martin knives sent me one of their MCE2 knives to try out and told me *not* to



The split saw of the Martin Knives MCE2 is highly effective on larger branches and works well cutting notches.



(above, top) The cordage from the MCE2 can be used to create traps like this bird/small mammal trap. The excess cordage can be used to create trap triggers such as this Paiute. (above, bottom) A hollow handle can be filled with matches or a longer lasting ferro rod. Relying on natural tinder like this fatwood, thousands of fires can be lit.

go easy on it. As the photos from my testing will indicate, I did not.

Also reviewed are a Randall Knives Model 18 and an RMJ Tactical Shrike Tomahawk both with hollow handles.

MODERN STRENGTH

Hollow handle knives are typically made from the blade tang, guard, a hollow compartment handle with a cap and a guard. In the late 20th century, Chris Reeve Knives produced a one-

piece line featuring a knife made from a single billet of steel with an aluminum cap. This eliminated the problem of blade separation from the handle and guards wiggling loose. Chris Reeve Knives no longer produces this design but similar one-piece blades are available from production companies.

Other manufacturers improved on the weak design by soldering the components together and pinning the blade in place with multiple roll or push pins. Martin Knives greatly improved the design by threading the blade into the handle and using an aircraft grade epoxy to create one of the strongest connections possible. In fact, multiple destruction tests done by Böker Knives, maker of their production level Apparo design, resulted in the blade breaking not where it was expected to at the ricasso but rather at the shear point where the blade was viced into place. The Böker engineers could not break the handle from the tang at the connection. The RMJ Tactical Shrike features a hollow over molded handle. The handle not only provides a water-tight compartment for a honing stone or survival components, but the handle serves to protect the user from electrical current as well. This feature is ideal for military and law enforcement personnel who may use it for breaching rigged doors.

“MARTIN KNIVES SENT ME ONE OF THEIR MCE2 KNIVES TO TRY OUT AND TOLD ME NOT TO GO EASY ON IT.”

The handle material runs through the weight reduction holes in the Shrike's handle and will not separate. Randall's #18 has been around since the Vietnam conflict and the company's reputation for quality is due in part to the reliability of this model. In my research, I found no accounts of handle separation and many avid users attribute it to the use of silver solder reinforcing the construction of blade, guard and handle. The design flaws of the past are no longer an issue and modern strength is achieved through improved design and construction.

WHAT TO CARRY?

When *First Blood* came out and featured the Lile hollow-handle blade, everyone watched with great attention. Stallone used the contents of the handle to hold matches, fish hooks, and line and possibly other small survival

The Randall Model 18 is a classic hollow handle survival knife popular with pilots in Vietnam.



items. Since then, outdoorsmen have found ways of packing handles with everything from folding saws to small flashlights to water treatment tablets to emergency cash.

As the hollow handle knives lost popularity, they were replaced with knives featuring sheaths holding fire steels and sharpening stones or other provisions to hold a multi-tool or spare magazine. In re-examining the hollow-handle knife, we can replace items previously carried with those offering better technology.

A small ferro rod can replace an equal diameter of wooden matches and provide many more potential fires. Recently, in the mountains of Hope, British Columbia, where *First Blood* was filmed, I used the MCE2 to start fires with locally harvested resin wood (aka Fatwood) and the small ferro rod carried inside.



Many hollow handle knives feature small button compasses in the buttcap for general wayfinding.

“THE KNIVES BY RANDALL AND MARTIN KNIVES WILL COST MORE THAN YOUR MASS PRODUCED KNIFE BUT WITH PRICE COMES THE UNDERSTANDING OF CRAFTSMANSHIP AND QUALITY MATERIALS.”

For wounds, suture material can be replaced with steri-strips or derma-bond surgical glue. Monofilament line can be replaced with braided fishing line or Kevlar thread that is much stronger. If space is truly at a premium, the handle can be double wrapped with line starting with braided fishing line first followed by the #36 braided bank line or paracord of choice. The average hollow handle, 4.5 inches for argument's sake, will hold between 15 to 18 feet of #36 line. All of these items were once and continue to be considered “last ditch” items and should never be thought of as a complete kit but supplemental items instead.

Additionally, wet/dry sandpaper can act as a sharpening system, a cut down Reynold's oven bag and water tablets can provide the container and means to treat water and firearms take down tools can be carried if paired with a handgun or rifle. RMJ Tactical uses the spare space in the hollow handle of their Shrike to house a sharpening stone which may be needed if the tool is used aggressively for rescue and breaching applications. The extra space of a hollow handle goes unnoticed until it is needed. Just as the inside of a cooking pot is used to nest a fuel canister or camp supplies rather than being carried separately, small hard to come by items can be carried and forgotten about until they are needed.

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“...YOU CAN ALWAYS DUCT TAPE OR ZIP TIE A SMALL NALGENE 2-OUNCE BOTTLE TO YOUR KNIFE SHEATH WITH THE SMALL CONTENTS INSIDE.”



(above) The Aitor Jungle King II is a unique survival knife with a storage compartment built into the sheath. (below) Traditionally, hollow handle knives are filled with fishing equipment, needles, firestarting gear and other difficult to acquire tools.



WHICH IS BEST?

It is fairly easy to identify a quality hollow handle blade and premium price is, in this case, a good determining factor. The knives by Randall and Martin Knives will cost more than your mass produced knife but with price

comes the understanding of craftsmanship and quality materials. If knives are considered to fall into production, mid-tech and full-custom categories, these survival knives are custom made and carry better than average warranties. Some of the older designs are fetching high prices on online auction sites for their collectability but also their durability and rareness. Other hollow handle knife makers are out there offering mid-tech designs trading off price for materials used and quality.

The Böker/Martin Knives Apparo for example can be purchased for less than \$150 online with no waiting during production (at the time this article was written). In a worst case scenario, if you can't find a hollow handle blade to your liking and still want to have some supplies on hand, you can always duct tape or zip tie a small Nalgene 2-ounce bottle to your knife sheath with the small contents inside. This will let you carry some



(left) Which is the better option? Wind and water-resistant matches or a ferro rod? How many fires can you get out of each? Is spark better than flame? You decide.

last-ditch gear with your blade. Otherwise, you can tuck certain items in your wallet as a last ditch kit similar to the contents specified by the USRSOG group in their "Final Option" kit.

Before hollow handle blades are dismissed based on assertions from years of inferior design failures in the field, the current offerings should be examined and reasons why they may be the best option should be considered. After extensive testing of modern hollow handle designs, I can confidently assert they are strong enough to handle survival skills training and outdoor needs. There are some great leftovers from the '80s like Bon Jovi, Teenage Mutant Ninja Turtles and Nintendo, and added to this should be the hollow-handle knife.

It isn't a design for everyone but it may be the right one for you. **ASG**



(above) The RMJ Tactical Shrike incorporates a hollow handle and is equipped with a sharpening stone, another effective use of space. (right) Cross section of RMJ Tactical Shrike Hollow handle.



SOURCES
boker.de/us
martinknives.com
randallknives.com
rmjtactical.com

Many Applications

» The hollow-handle knife can be adapted for use by many occupations and for different recreation. Carried as first line survival gear (worn on the pants belt instead of the pistol belt) it provides the user with basic survival gear. For those who can utilize the smallest items to the greatest advantage (SERE), the hollow handle can carry items in a compact manner. One could argue a firesteel could be lost carried on the outside of the sheath but is less likely to disappear when carried inside the blade. One benefit is certain, in saltwater conditions; the hollow handle prevents a ferro rod from deteriorating from exposure if carried externally.

Also, the hollow handle can eliminate the need to carry a supplemental pouch on the outside of the sheath to prevent snagging or hanging up and streamlining the profile of the gear carried. Other applications will be determined by the variety of contents one can carry in the hollow handle. Speaking of handles, one criticism of round handled knives is the inability to "night index" or in other words determine which side of the blade is sharp. If a handle is cord wrapped by whipping, there will be two strands of cordage running the length of the handle. This slight ridge underneath the wrapping provides the "night index" for tactile edge awareness or for those who make a habit or have fantasies of cutting objects in complete darkness.

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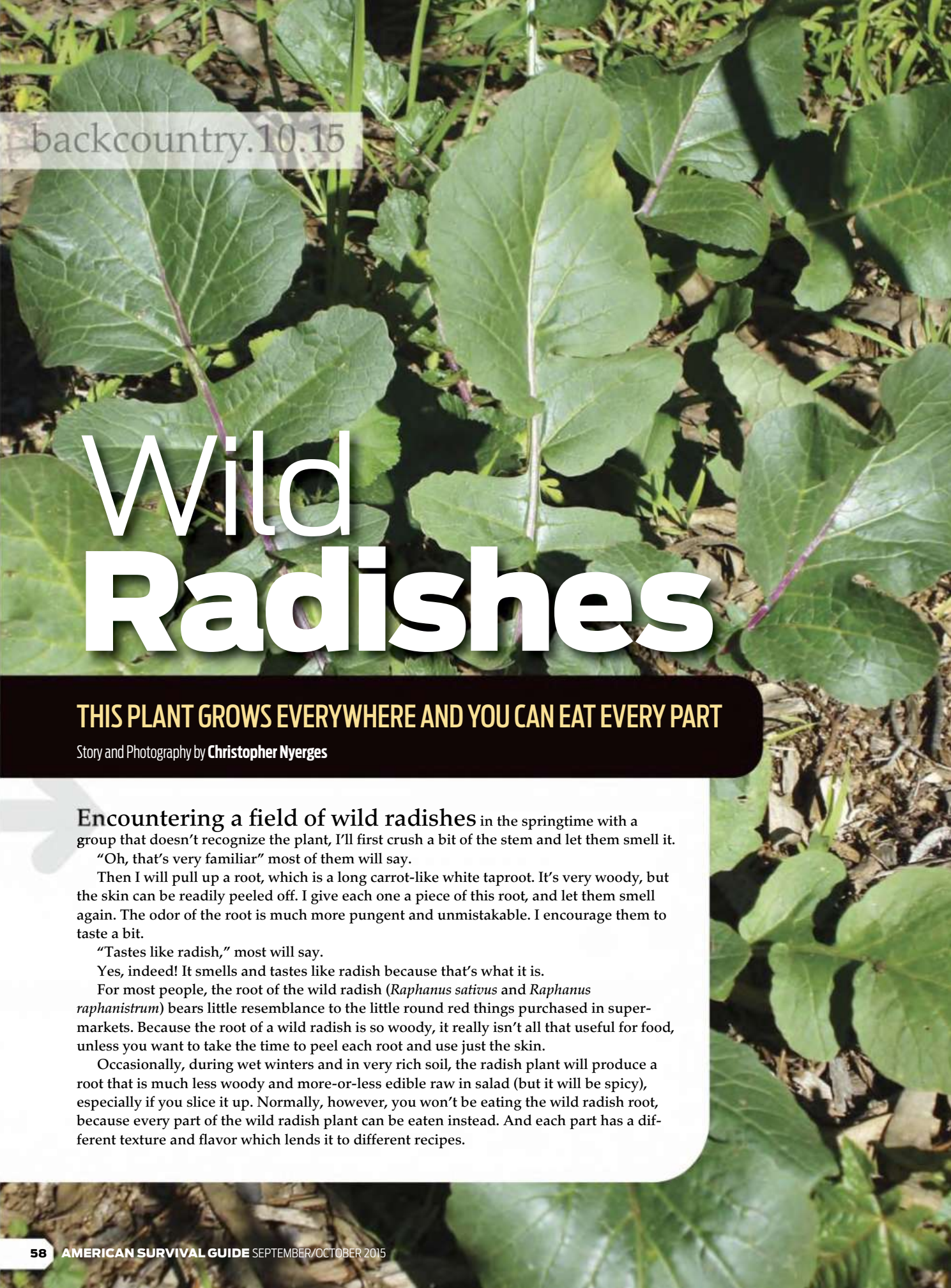


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backcountry.10.15

Wild Radishes

THIS PLANT GROWS EVERYWHERE AND YOU CAN EAT EVERY PART

Story and Photography by **Christopher Nyerges**

Encountering a field of wild radishes in the springtime with a group that doesn't recognize the plant, I'll first crush a bit of the stem and let them smell it.

"Oh, that's very familiar" most of them will say.

Then I will pull up a root, which is a long carrot-like white taproot. It's very woody, but the skin can be readily peeled off. I give each one a piece of this root, and let them smell again. The odor of the root is much more pungent and unmistakable. I encourage them to taste a bit.

"Tastes like radish," most will say.

Yes, indeed! It smells and tastes like radish because that's what it is.

For most people, the root of the wild radish (*Raphanus sativus* and *Raphanus raphanistrum*) bears little resemblance to the little round red things purchased in supermarkets. Because the root of a wild radish is so woody, it really isn't all that useful for food, unless you want to take the time to peel each root and use just the skin.

Occasionally, during wet winters and in very rich soil, the radish plant will produce a root that is much less woody and more-or-less edible raw in salad (but it will be spicy), especially if you slice it up. Normally, however, you won't be eating the wild radish root, because every part of the wild radish plant can be eaten instead. And each part has a different texture and flavor which lends it to different recipes.

Recognizing the Wild Radish

Each young leaf of wild radish is lyrate pinnately divided, meaning that there is one large end lobe and smaller side lobes or segments to the leaf: It resembles a guitar. When the young leaves of wild radish are newly emerging, it would be easy to confuse the leaves with those of mustard (*Brassica* species). However, wild radish leaf lacks the fine hairs that you find on mustard. If you examine a wild radish leaf closely, it will be covered somewhat sparsely with bristles, but the leaf is smoother than mustard, and you will see a tinge of red in the midrib of the radish leaf.

As the plant flowers, instead of the usual yellow mustard flowers, the flowers will be lavender, white, or a pale yellow. There is the typical mustard family flower formula of 4 petals, 4 sepals, 6 stamens (4 long and 2 short), and 1 pistil. The flowers are followed by fleshy seedpods that resemble pointed jalapeño peppers.

The root of wild radish is a white taproot, not at all like the radish you might grow in your garden or buy in the store. It is largely woody and inedible, though there is a soft outer layer that can be peeled off. The taste of this outer root layer is so obviously “radish” that most anyone can identify this plant by that aroma and flavor.

Overall, wild radish can get up to 4 and 5 feet in ideal conditions. You will find them in fields, wet bottom lands, farms, vacant lots, and disturbed soils.

Eating Wild Radish

The leaves can be collected at any time in their growing cycle, cut into small pieces, and added to salads. They are hot and spicy, so add to other greens. Though they are good in salads, you’d probably not care for a salad of only radish leaves. Mix them with other greens and toss in some tomatoes and avocado.

The leaves can also be added to soups, egg dishes, and stews, used in pretty much the same way you’d use spinach greens. The white-to-lavender flowers are quite tasty and sweet when you first pick and nibble them, but your mouth will get very hot. Eat them sparingly. You can pick the flowers and add to salads and other dishes as a tasty garnish.

The tender flower tips which includes the tender stems—somewhat resembling Chi-

“THE LEAVES CAN ALSO BE ADDED TO SOUPS, EGG DISHES, AND STEWS, USED IN PRETTY MUCH THE SAME WAY YOU’D USE SPINACH GREENS.”

nese broccoli—can be snapped free, steamed or boiled, and served with butter, cheese, or a spicy sauce. You’d serve this very much like asparagus, except they are much spicier.

The green seedpods, which somewhat resemble jalapeño or serrano peppers, can be nibbled when they are still tender inside and haven’t gotten woody. You can add the chopped tender pods to soups and salads or try pickling them. Once they get old and white inside, they are already too old to eat and should be left alone to produce seed.

Health Benefits

According to medical consultant Anthony William, radishes are antibacterial, anti-fungal, and a diuretic. They are rich in Vitamin C, folic acid, and anthocyanin and are excellent for sinus congestion, sore throats, chest colds, asthma, and hoarseness.

Radish is also very helpful in preventing and fighting urinary tract and bladder infections. Eating radishes (wild or otherwise) on a regular basis can help prevent colds and flus and they are a great anti-cancer food and are known to specifically benefit stomach, kidney, mouth, and colon cancer.

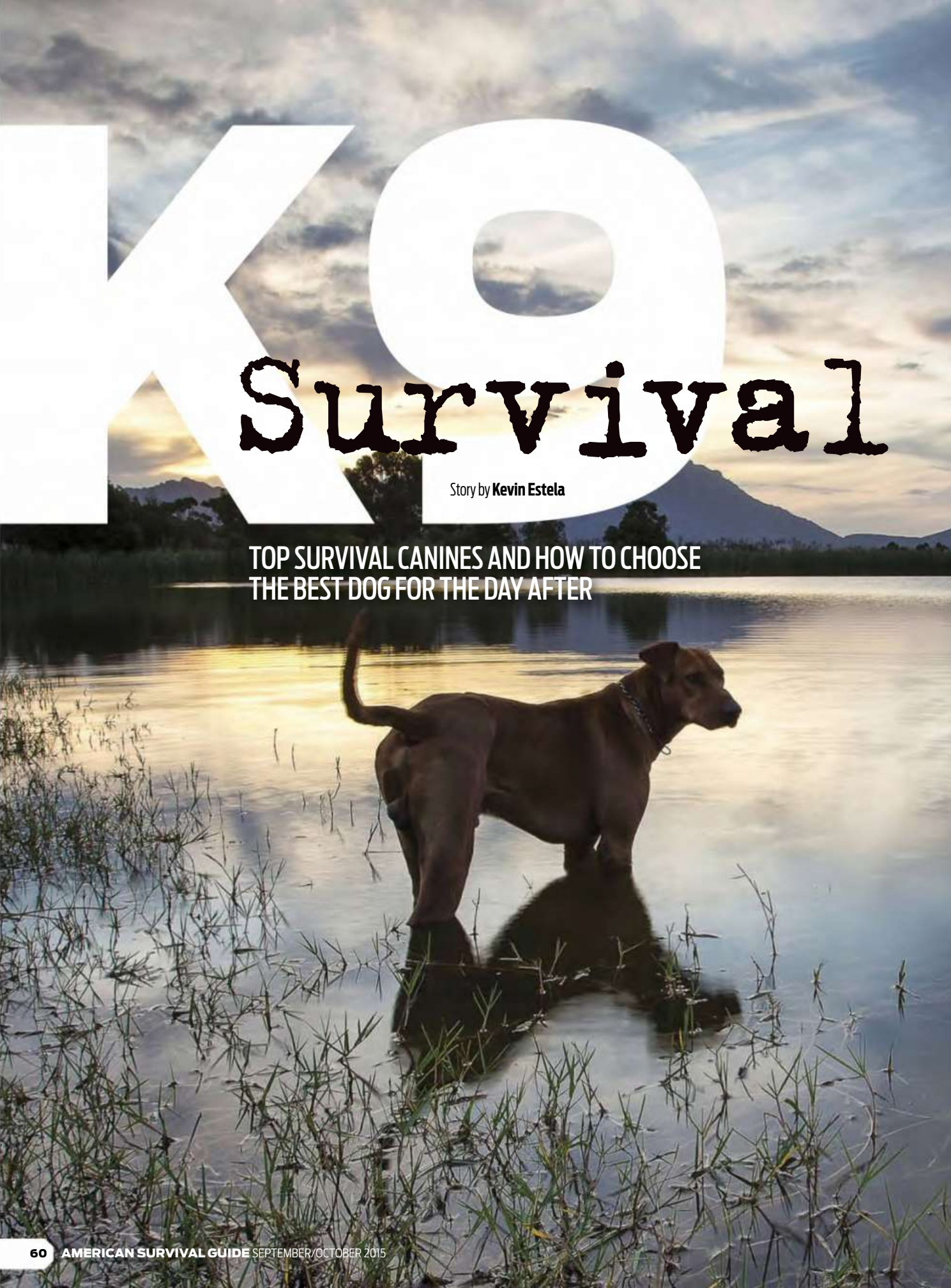
It’s also a good idea to eat radishes with starchy foods such as pasta, potatoes, and grains as they have enzymes that aid in the secretion of digestive juices. Radish leaves contain more Vitamin C, protein, and calcium than the root.

The green tops are highly nutritious and mineral rich and should be valued as much if not more than their roots. Radishes and their greens can be juiced for an excellent detoxifying drink that can soothe the digestive tract and cleanse the entire body. **AND**



From the flowers to the stems, every part of the wild radish can be eaten, and each provide a different flavor. The flower can range anywhere from white to a lavender. The root of wild radish is a white taproot; it is largely woody and most inedible, save for the soft outer layer.

(opposite) The leaf of a wild radish is smooth and there is a tinge of red in the midrib of the leaf and stem. Each young leaf is lyrate pinnately divided, meaning that there is one large end lobe and smaller side lobes or segments to the leaf.



Ko Survival

Story by **Kevin Estela**

**TOP SURVIVAL CANINES AND HOW TO CHOOSE
THE BEST DOG FOR THE DAY AFTER**

“...ASSUMPTIONS CAN BE MADE WHY HUMANS STARTED VIEWING SOME ANIMALS AS SURVIVAL COMPANIONS RATHER THAN FOOD.”

Historians can't agree when the first dogs were domesticated. DNA science places the incorporation of wolves into gatherer-hunter tribes between 15,000 to 30,000 years ago. At some point, primitive man connected with roaming packs and adopted one or more into their tribe. From the Arctic to the Middle East, evidence suggests canines were the first thing humans domesticated. The exact date when dogs became man's best friend may never be known but assumptions can be made why humans started viewing some animals as survival companions rather than food. DNA science places the incorporation of wolves into gatherer-hunter tribes between 15,000 to 30,000 years ago. At some point, primitive man connected with roaming packs and adopted one or more into their tribe.

Dogs have physical and instinctual attributes far beyond those of man. They have predictable behavior and can be trained to accomplish work beyond simple “tricks.” In the present day, our four-legged friends fill valuable survival-related roles in our readiness planning. Beyond the emotional experience people describe in choosing their dog, there are logical reasons certain dog breeds will be the best choice for your situation.



PHOTO BY GETTY IMAGES

TRANSPORTATION AND PACKING

The concept for a sled dog was likely conceived when the strength of a wolf was noticed tugging at the end of a leash. In arctic areas, sled dogs have been used for generations. The transportation abilities of the Alaskan Malamute and Husky are highlighted in races like the Alaskan Iditarod that emphasizes the endurance of mushing dogs. Sled dogs are true powerhouses with the ability to run unexhausted far beyond that of a human under the weight of arctic clothing.

These dogs require thousands of calories per day and with their thick coats, they are extremely well-adapted to working in cold conditions. In the right conditions, sled dog travel can be a viable option for the survivor. The ability to travel great distances and through tight paths in cold weather capable of freezing snow machine engines may appeal to you. If so, a team of sled dogs could be the right choice for you.

Dogs need not work in a pack to carry equipment into the field. A number of dog-mounted bags are available for them to carry some equipment. Collapsible bowls, longer leads for use in camp, and dog toys can be carried in their pack rather than taking up space in yours. One word of warning: Don't let your dog carry its own food or rewards if it is working dog. The scent can throw off its nose to the game/person being tracked or the task being accomplished.

Some lighter-weight emergency equipment can also be carried with them should you lose your pack. St. Bernards iconically carried a flask around their neck. If for some reason you are separated from your gear, your dog may have some emergency equipment that could stop bleeding, start a fire, or signal for help. Of course, whatever you give your dog to carry should not be too heavy for it to carry which can be detrimental to its health.

HUNTING

Ask any bird hunter what it is like to hunt without a dog compared to with a well-trained dog. Birds will often remain motionless and will not flush even when literally walking on top of them. Hunting dogs fall into flushing or pointing categories with popular breeds including Brittany, Labrador Retriever, and Weimaraner.

Hunting birds with a dog maximizes the use of an open space and results in more birds stuffed in your field vest. At times, dogs will even retrieve birds that haven't flushed and they are brought back alive. Some bird dogs can be taught to retrieve birds that fall into the water after being shot. Unless watercraft is available, retrieval over water is very difficult if not impossible for a human.

Birds are not the only game dogs can assist in the hunt with. Wild boar are often hunted with the help of dogs. Given the danger associated with pursuing wild boar, an animal known for its tendency to turn on the hunters, fearless dogs provide an edge in the field.

Popular hog hunting dogs include the Rhodesian Ridgeback, the Pit Bull and the American Bulldog. Be careful when selecting the pitbull and only adopt one from a reputable breeder as this breed is often suspect given inbreeding practices by the wrong owners. Boar hunting dogs serve as either the tracking dogs or the dogs sent after the dangerous boars once they are cornered. They are given some protection from the tusks but their natural instinct protects them as they wrangle the boars and control the animal. Boar hunting with dogs is a team effort, requiring coordination but it is highly effective against smart prey.

**“BOTH THE
BITE AND BARK
OF GERMAN
SHEPHERDS,
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AND BELGIAN
MALINOIS ARE
FORCEFUL AND
COMMAND
RESPECT.”**



PROTECTION

Police and military K-9 units train certain breeds of dogs to work alongside soldiers and police in the field. Some of these working dogs are trained to sniff and some are trained to fight. Both the bite and bark of German Shepherds, Dutch Shepherds and Belgian Malinois are forceful and command respect. A common argument regarding “military style” firearms is that the civilian should have similar technology. For a similar logical reason, many of these dogs are popular in civilian homes. Like any tool capable of inflicting harm, a training regimen should be followed to reduce the chance of injury to the handler or anyone around him and his working dog.

One particular breed of dog highly specialized for protection of property is the Tibetan Mastiff. These dogs historically were nocturnal, roaming the villages and monasteries at night. They can be trained to understand specific confines of property lines and are highly capable of warding off large predators. Highly intelligent and powerful, these dogs are not without limitation. They are self-sufficient and can be trained to look after your property when you are not around.

One element of protection is avoidance and sometimes the best “guard dogs” are not the largest or strongest. Smaller dogs in the poodle (traditionally a water dog) and terrier (traditionally meant for hunting small pests) breeds



True or False?

There are many myths and misconceptions about dogs. How well do you know your survival companion? Take this quiz and find out.

1. A dog should be allowed to lick any wound it has until it heals.
2. It's okay to give your dog the bones from your dinner plate.
3. Cracking the windows of your car will keep your dog cool while you are away.
4. If your dog's tail is wagging, that means he/she is happy.
5. The only way to train a large powerful dog is to show him/her dominance.
6. My dog chewed up my shoes because they were upset I left them alone.
7. It's okay to let your dog lick your face because dogs have clean tongues.
8. You can't teach an old dog new tricks.

(ANSWERS ON PAGE 66)

work well as sentries alerting when an anomaly is present. For years, my family's dog was a Maltese who was always listening and watching the front window for anyone walking to the door. Smaller dogs may be all your living space allows and your readiness plan should include the means to address a threat once your dog alerts you to one.

COMPANION

Darkness, in the middle of the night, can make a stay in the outdoors a lonely place. When your sense of vision is deprived, your sense of hearing is magnified making the smallest noises terrifying to the uninitiated. This is why fire provides a feeling of relief when spending a solo night out. Having a dog at your side changes this scenario. They can post guard duty while you sleep and even if they are slumbering; their trigger to wake up may be more sensi-

tive than your own. Dogs become reliable companions, are often referred to as family and at times are believed to be "like a person." The fear of traveling alone prevents a lot of outdoorsmen from experiencing the outdoors but with a companion dog, the paralysis is alleviated or taken away altogether. This opens up some of the best experiences in the outdoors taken on solo, away from large groups.

Dogs make great companions for little children as well. Since they are smaller in size, certain predatory animals may view children as less of a threat than a grown adult. This all changes with a dog as a companion as predators are less likely to attack if a meal will not be had without a fight. Make sure to pair your child with a dog they can handle on their own. As much as we would like to think a dog will heel when commanded, the instinct to chase regardless of how much you hold them back on the leash is strong and likely stronger than your child's grip. Also, your dog's disposition is important around children. A couple of my martial arts training partners have Rottweilers and small children under the same roof. While this dog may be seen as outsiders as inappropriate for around children, how the dog is raised will determine if it is a good fit.

"THE FEAR OF TRAVELING ALONE PREVENTS A LOT OF OUTDOORSMEN FROM EXPERIENCING THE OUTDOORS BUT WITH A COMPANION DOG, THE PARALYSIS IS ALLEVIATED OR TAKEN AWAY ALTOGETHER."



PHOTO BY THINKSTOCK



Top Skills Your Survival Dog Must Have By John Devine

» As a U.S. Navy SEAL, we do not simply hope for the best when we face adversity. We train and prepare for the moment our training gets us through where others would fail. This should apply to you and your teammates, human or dog alike. If your dog lacks obedience, he will most certainly not perform during an emergency situation. With proper training, your dog can be an asset instead of a liability.

What your dog needs to know to be prepared for an emergency situation:

> **Recall:** Your dog should have a solid recall for any situation. Does he/she come to you when there are other dogs and people around? Does he/she come to you when there is a danger that you see and need to get him/her back to you on moments notice?

> **Stay:** If you decide to check something out, will your dog stay in place? Will your dog stay outside a building as you walk inside to investigate? Will he/she still be waiting for you in the same spot unmoved, no matter the time it takes to return?

> **Heel:** Will your dog follow you without question? Through a crowd of people? Through a park of dogs with balls being thrown? A dog needs to stay by your side without much effort when you have a lot going on.

> **Alert:** If someone knocks on your door, will he/she bark? Will your dog alert you to danger in the dark of night while you are trying to sleep? It's important that while you are not able, your dog can still be alert.

> **Quiet:** Will your four-legged partner be quiet on command? Maybe you do not want to alert everyone in the area you are there.

> **Social:** You want your dog to be social with people as well as other dogs. Can you trust that your dog won't see every person/dog as a threat? The best response when you are walking is a neutral one. He/she should not be overly excited about someone.

> **Physical Shape:** Is your dog a couch commando? Get outside and run your dog. Throw balls, play tug, swim, the list goes on. They should have physical exercise every day. Your dog was meant to move and so were you. If you and your dog are not able to hit the road/trail when the time calls, you and your dog could become a casualty simply from being too out of shape.

You don't need to have a Navy SEAL level trained dog to take on everyday challenges. Master the basics and you will have a partner that will be ready when the moment calls. Do not hope for the best and expect your dog will rise to the occasion.

The Survivor's Dog, Pros and Cons

A dog provides a wide range of benefits, from early warning detection and defense to a major threat deterrent to companionship and a possible source of food (if it comes to that). But what are the pros and cons of the five most popular large-breed dogs.



Labrador Retriever

Hands down, the Lab is the world's most popular dog. It's webbed feet make it an excellent swimmer, as its original job was to retrieve fishing nets in England in the early 19th Century.

Pro: Excellent hunting dogs, they have high endurance and are strong swimmers. They are very trainable, intelligent, and possess excellent hearing and sense of smell.

Con: Labs can overheat easily in extreme heat, and can be loud and clumsy at times. Their lovable nature makes them questionable protection dogs. They lose focus easily when around prey in the field.



Rottweiler

Originating in Rottweil, Germany, the Rott is a very old line (from the Roman era). They were used to herd livestock and pull carts to market. They are very strong and intelligent breed.

Pro: The best dog for personal protection given their reputation and intimidating appearance. They are very intelligent and easily trainable. They have a strong body and can carry/pull a great deal of weight. Excellent sense of hearing and smell.

Con: They do not have great endurance and can overheat easily. Rottis are not good hunters/retrievers. The breed isn't respected for being a "safe" dog.



German Shepherd

Originating in Germany, the Shepherd line of dogs is only 120 year old and was developed to efficiently herd sheep in the fields. It is the foremost police and military dog and is extremely popular among those wanting a dog for protection or personal assistance and search-and-rescue.

Pro: High endurance, speed, agility, and strength. They have a very strong work ethic and pose quite a formidable presence. They possess the best hearing and sense of smell and are very intelligent.

Con: They can be plagued with hip dysplasia and other health problems.



Jack Russell Terrier

The Jack Russell was developed for its ability to hunt foxes and the breed hasn't changed much for the last 250 years. They have a high level of energy which requires a great deal of exercise. They are tenacious and persistent, which makes them a wonderful hunting/tracking dog.

Pro: The biggest compliment to this dog is its endurance level. They have exceptional hearing and smell, and their small size means they eat less and take up less space.

Con: They aren't very intimidating, but they're not very quiet due to a higher amount of barking. They are not cold-weather dogs, and their drive makes them difficult to contain.



Dog From the Pound

With a mutt, one can easily get the best of all of the dogs mentioned in this article or one could get all of the worst qualities. It is a crapshoot, as it is difficult to know until well after the dog and owner may have bonded. However, every dog can be trained, and with proper training from someone who knows what he/she is doing, mutts can be a great asset in a survival situation.

Pro: It could be the best dog you've ever owned.

Con: It could be the worst.

PHOTOS BY GETTY IMAGES

Answers: 1. False. While dogs will lick their wounds, they can lick too much and prohibit scab development and impede healing. 2. False. Bones from your plate have been cooked and are more prone to cracking and splintering that can be dangerous to their gastrointestinal system. 3. False. The internal temperature of a vehicle can be significantly higher than the outside ambient air temperature even with the windows completely down. Do not leave your pets behind. 4. False. When your dog's tail is wagging, it can be a sign of anxiety or impending aggression. Humans smile as a defense mechanism without feeling happy. The same idea applies to dogs. 5. False. Positive reinforcement has been used to train tigers, elephants and the large mammals at aquatic shows. It can be used on your dog too. Negative reinforcement can actually lead to further negative behavior. 6. False. Dogs enjoy chew toys just as much as your shoes. Humans should take the steps to remove items from doggie site and "own" their mistakes rather than blame their dogs if they don't. 7. False. Dogs tongues make contact with many surfaces and substances you would never think of licking. They can transmit microscopic worms and bacteria to you and they should not be allowed to lick your mouth. 8. False. This myth probably came about due to impaired vision and hearing of older dogs. With enough patience and discipline, old dogs can be taught new tricks.

PUREBRED OR MUTT?

One of the most significant decisions in choosing a dog is whether to get one with no other DNA than the purest or one with a mix. Purebred dogs are favored for specialty roles where optimal performance is needed. This is accomplished through selective breeding and it comes at a cost. Pure bred dogs are generally licensed through breeders paying dues and membership which is passed onto the adopting family. Also, depending on the breed, some dogs suffer health problems at the expense of appearance. The American Bulldog is an example of this as it's breathing can be difficult and corrective surgery may be necessary. On the other end of the spectrum, mixed dogs may have desirable features of a few different breeds. They generally have better health as the mating process leaves out congenital health problems.

Some "mutts" are not mutts at all as they are considered designer dogs pairing the attributes of one with another. For the survivor who wants to have a dog in his/her readiness plan but can't due to health concerns (mainly allergies), there are breeds that are hypoallergenic. In the past, it was difficult to determine your mutt's breed but with present DNA technology, the exact lineage can be broken down with some genetic samples from your pet. Of course, some physical features are clear tells of what breed a dog is and depending on where you adopt your mutt from, composition won't matter if an emotional bond overrides your decision making.

All the logic behind how to adopt the perfect dog for your survival situation can be easily argued, but if you experience a connection with a particular dog, go for it. Just like our primitive ancestors, that same connection likely resulted in the first domesticated dogs coming into the tribe. What dog will you let into your tribe? ■■■

Increased Footprint

Dogs make great companions when pursuing outdoor recreation. From hiking trails to the cockpits of kayaks and canoes, dogs are commonly seen by man's side in all forms of outdoor recreation. As we travel through the backcountry, we leave a footprint of our activity. The footprint of our pets must be considered as well.

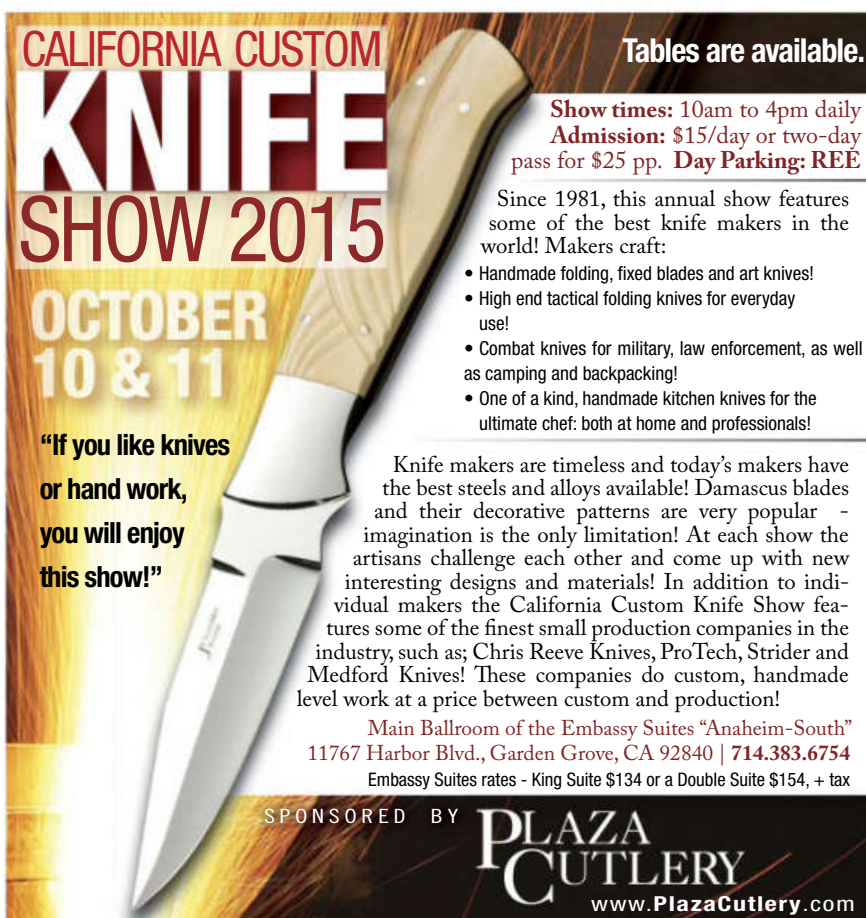
As we hike down a trail, we leave tracks in the ground we walk on. Our pets leave their pawprints too. Depending on the level of visibility you wish to maintain, your pet may pro-

vide an easier track to follow. Rather than being one of the many solo hikers on a trail, you are one of the hikers with a dog, and that makes you stand out. Just as our boot prints vary in size, so do our pet's paw prints making you easier to follow or track down.

Just as humans abide by "Leave No Trace" ethics when outdoors, so must our pets. In camp, it is easy to let our pets roam around unsupervised. Depending where you are, this could mean little chance of encountering anyone else or the potential of an encounter with another person's pet when you aren't watching. This could also mean a dog

digging wildly to pursue a burrowing animal or rolling around in an area marked off-limits to travel. Make sure to keep your pet under control at all times.

It is easy to leave clean up bags at home if you follow the rules for disposing of animal waste. Catholes work just as well for pet poo as they do for human. A small shallow hole can be dug into the ground where the excrement is placed and covered over to decompose. No one likes walking by a trail with human or pet waste is left out in the open. Clean up after your pet to ensure the trails are appreciated by all.



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Rx K9

TREATING YOUR SURVIVAL COMPANION IN CASE OF AN EMERGENCY

Story by **Kevin Estela** and **Will Richardson**

ANIMALS GET INJURED. Hunting dogs, camp dogs, trail dogs, or dogs that you simply take to the park are all threatened by the same dangers as us humans. Walking on hot asphalt, stepping on a piece of glass, chasing a sharp-clawed animal, or wandering into a sticker bush are only a few examples of potential injuries dogs are susceptible to on a daily basis. Only these threats are much more pronounced because of a dog's innate nature as a predatory animal, their lack of protective gear, and not fully understanding the scope of the situation they are in. If your dog goes with you on your adventures or if he just happens to be with you at the wrong place at the wrong time when catastrophe strikes, you'll want to be prepared for his safety and well-being too.

Some of these injuries are preventative by providing your dog with the correct equipment depending on the environment you both are in. However, accidents happen, and you have to deal with the consequences.

Your dog depends on you.

PHOTO BY GETTY IMAGES





DOG FIRST AID

You wouldn't think about leaving home without a first-aid kit for yourself so don't plan on traveling into the woods without some specialized gear for your pet. There are some common first-aid considerations between humans and canines as well as some specialized kit for injuries specific to dogs. Many of the skills you will learn to administer first-aid to a human can translate to that of a dog.

The best course of action after your dog has been injured is to get him immediately to a veterinarian. Since this isn't always possible because you may be stuck miles from civilization (or there might not be a civilization), you'll have to take matters into your own hands.



BROKEN NAILS AND SPLIT PAWS

We have boots on our feet and can forget about the terrain we walk on. The only protection that our dogs have from the trail is the thick pads they have built up at the base of their feet. Dogs that have spent the majority of their life inside have softer more vulnerable pads than dogs that stay outdoors.

Treatment: When a pad is cut, there will be blood and it is natural for your dog to lick it. You should clean it out as best as you can and prevent further injury. Broken or ripped off nails also occur when they catch on cracks in rocks. Use some anti-bacterial ointment on the wound and wrap it with a bandage. Keep your dog from licking the wound or tugging at the bandage and invest in some dog boots.

CHOKING

Dogs investigate things by smelling, licking, and tasting them, which means all sorts of things will end up in your dog's mouth. Like humans, dogs sometimes take too big of bites and he will begin to choke. If your pet is choking but he can still breathe, try to keep him calm. He will eventually work out the obstruction as long as air is getting into his lungs. Keep him upright and walking. If your pet's gums or tongue are turning blue and he's in obvious distress, it means he has a complete airway blockage and needs help in the next couple of minutes or he will die.

Treatment: Place your hand over the top of his muzzle and lift it up to open the mouth and to extend his airway. For an object that is visible, you can either reach in there with your hand and grab it or (on smaller dogs or for an object out of reach) use thin pliers to pull it out. Be vigilant not to accidentally push the object farther down his throat.

If that doesn't work, lay your dog on his side (he will probably already be laying down), place your hands at the very end of his rib cage (not on his rib cage) and push down and slightly forward (towards his head), applying pressure in quick, firm strokes. Similar to the Heimlich maneuver, the results of your strokes may force the object out.

PORCUPINE QUILLS (AND OTHER BARBS)

Some dogs inevitably will pursue smaller animals as they encounter them in the woods. Up trees and down holes, it doesn't matter where the animal tries to hide, instinct kicks in and our dogs chase headfirst after them. When they encounter a porcupine, they are left with the reminder of the animal's defenses in the worst way: a snout full of quills.

Treatment: It is important to remove the quills quickly so they don't become broken or cause further damage, like an infection. This is a painful process and your dog may struggle, so it is a good idea to restrain him as best as you can. With a pair of pliers (never your fingers), grasp the quill as close to the skin as possible and pull straight out in the direction the quill entered. Disinfect the wound(s) and consider getting the dog a rabies vaccination.





GUNSHOT, ARROW OR PUNCTURE WOUNDS

You may take your dog out in the middle of hunting season and even if you take the appropriate steps to dress him/her in a blaze orange vest, accidents happen. Negligent hunters will shoot at a sound rather than identifying what it is first. As shooters, we may be familiar with the trauma kits carried during range time and we may have an understanding of how to medically-manage our own injuries. How do we take care of our dog if he/she survives getting shot?

Treatment: All cuts, punctures and bites have the potential to become infected, so caring for them immediately is essential to the survival of your dog. If he is bleeding profusely, cover the area with sterile gauze or a clean towel and apply direct pressure until a clot forms. Stopping the bleeding is of the utmost importance. If/when the wound stops bleeding, remove any dirt and debris and clean the area thoroughly. Apply clean gauze and wrap a bandage around it to keep the area clean and prevent the dog from licking it.

SNAKE BITE AND OTHER VENOMOUS ENCOUNTERS

Should a human be bitten by a snake, the advice is to move the patient to a medical facility while keeping them calm. Dogs are susceptible to bites and stings as they are curious creatures. Some dogs have survived being hit by snakes where snakes have "dry hit" them while others have not lived more than a few hours.

Treatment: Unfortunately, there isn't very much you can do to treat a venomous snake bite on a dog except for wrapping something constricting around the limb just above the bite mark (a strip of cloth to a belt) and making your way to professional care. Do not try to suck out the poison or make incisions in the skin.

POISONING

Sometimes the curiosity of dogs get the better of them and they ingest something they shouldn't. For example, a lot of dogs

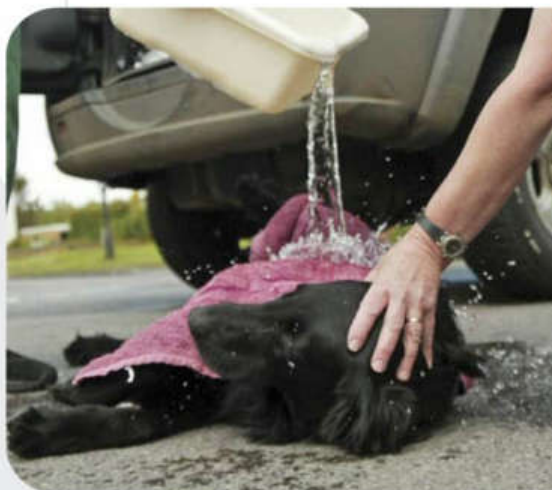
will drink puddles of antifreeze because of the sweet taste of the toxin ethylene glycol, which makes it lethal. However, some poisons (like azaleas and rhododendrons, chocolate and avocados, flea and tick products, household cleaners, etc.) your dog may drink, or eat, can be treated.

Treatment: Never induce vomiting until you discover what he has been poisoned by. Many toxins are corrosive, and vomiting may damage the esophagus or cause choking. If the poison isn't corrosive, give your dog a dose of one milliliter of three percent hydrogen peroxide per pound of dog weight. (Do not use ipecac or other human medicines). Use an eye-dropper to administer the hydrogen peroxide directly into your dog's mouth. If your pet does not vomit within five minutes, repeat the dose one more time.

TRAUMA

Perhaps something more dire will occur to your dog, such as a building collapsing on him or being hit by a car that will cause a great deal of damage, like broken bones and injured internal organs. Sadly, there will be situations where there will be nothing you can do but make your dog comfortable and wait for the inevitable.

Treatment: If you are within distance of a vet's clinic, strap your dog on a flat board to prevent him from any movement. Don't put pressure on his chest as he may be suffering from internal injuries and it will hamper his breathing. If you suspect the dog has a head injury, keep his head elevated slightly above the body. Cover him with a blanket to help treat for shock. Don't splint any broken bones, but do stop the bleeding if there are compound fractures. ■■■



Lightweight Canine Survival Kit

You may elect to purchase a dog pack for your pup but what do you put in it? Think about the weight you can comfortably carry in terms of percentage of body weight. For most grown adults, this is between 10 to 20 percent without much discomfort. Keep the percentage low for your pet (no more than 10 percent) and remember this will result in additional output. A 10-minute loaded hike is estimated to be the equivalent of a 30-minute unweighted hike. You will need to pack additional food for them. Here are some suggested items to consider. These items can be carried in lightweight form and will be essential to the well-being of your dog.

- > 25-foot looped paracord with carabiner or snap link for use as camp leash
- > Silver Grippers Tweezers or Tick Key for removing ticks already embedded
- > Whistle and polymer mirror for emergency signaling should you lose your gear
- > Pen and paper for writing distress note which can be placed back in pack
- > Light sticks or small LED light to help identify your pet at night in camp
- > Collapsible soft-sided dog bowl/dish for water breaks in camp
- > Polymer brush for grooming during down time
- > Frozen bottles of water to cool down the dog's body as it treks (it becomes a water source when it melts)



First Aid Kits Aren't Just for Humans Anymore

Adventure Medical Kit's Adventure Dog Series First Aid Kits *Story by Brian Kleinsmith*

»Until now, there weren't medical kits specifically geared for dogs. If your dog was injured, you had to rely on regular first aid equipment to do the job, nevermind that there are specific injuries dog can sustain that require specialized tools. This year, Adventure Medical Kits has begun to offer three kits in their new Adventure Dog series, each one aimed at treating a wide variety of injuries.



Me & My Dog

With dual-purpose in mind, the Me & My Dog Medical Kit is for both you and your dog, providing a host of gear that can treat injuries to humans as well as dogs. Weighing only 1.47 pounds, this kit contains all of the first-aid essentials you would expect in a fully-loaded first-aid kit. Specifically for the dog is a leash, hydrogen peroxide (to induce vomiting), moleskin, saline wound wash, and some antihistamine.

Also, it comes equipped with an emergency blanket to treat for shock and hypothermia, a cold pack to reduce swelling and treat heat-related illnesses, and a triangular bandage that could be used as an impromptu muzzle to use while he's being treated. To wrap injuries without having the bandage's adhesive stick to your dog's fur, it comes with an elastic bandage. A 10cc irrigation syringe will clean out wounds to help prevent infection, while the tick removal tool will keep his skin and paws insect free (it can also be used for removing burrs and splinters).

The whole kit fits into a 7.5 x 3.5 x 5.3-inch pouch, while the gear itself is split into two waterproof bags to keep it fresh and clean.

Me & My Dog Contents:

Wound Care / Cuts

- 5 - Easy Access Bandages, 1 x 3 inch fabric
- 2 - Easy Access Bandages, Knuckle fabric
- 3 - Butterfly Closure Fabric Adhesive Bandage
- 2 - Sterile Gauze Dressing, 3 x 3 inches, Pkg./2
- 2 - Sterile Non-Adherent Dressing, 2 x 3 inches
- 1 - Conforming Gauze Bandage, 2 inches
- 1 - Tape, 1 inch x 10 Yards
- 1 - Elastic Bandage Self-Adhering, 2 inches
- 1 - Irrigation Syringe, 10cc. with 18 Gauge Tip
- 1 - Saline Wound & Eye Wash
- 1 - Nitrile Glove, (Pair)
- 3 - Triple Antibiotic Ointment
- 6 - Antiseptic Wipe
- 1 - Moleskin, Pre-Cut & Shaped (14 pieces)
- 2 - Alcohol Swab

Sprain / Strain

- 1 - Triangular Bandage
- 1 - Instant Cold Compress
- 3 - Safety Pin

Medical Instruction / Instruments

- 1 - Wilderness & Travel Medicine (book)
- 1 - Pet First Aid Manual
- 1 - EMT Shears 4 inches
- 1 - Splinter Picker / Tick Remover Forceps
- 1 - Leash, 5 inch Nylon
- 1 - Hydrogen Peroxide 3%, 1 oz.
- 1 - Survive Outdoors Longer Emergency Blanket

Medication

- 2 - Aspirin (325 mg.)
- 2 - Antihistamine (Diphenhydramine 25 mg.)

Trail Dog

This kit is for dogs only and is tailored to the kinds of injuries dogs most sustain on a daily basis, which are injuries primarily to the paws and muzzle. It comes with an assortment of dressings and bandages, wound washes, antiseptic wipes, and alcohol swabs.

Like other kits, the elastic bandage won't stick to a dog's fur, and it includes a triangular bandage to use a muzzle, if necessary. The first aid manual is helpful in treating specific wounds. It weighs just 0.75 pounds and its dimensions are 7.5 x 1.5 x 5.3 inches.

Trail Dog Contents:

Wound Care

- 2 - Sterile Gauze Dressing, 3 x 3 inches, Pkg./2
- 2 - Sterile Non-Adherent Dressing, 2 x 3 inches
- 1 - Gauze Bandage, 2 inches
- 1 - Irrigation Syringe, 10cc. with 18 Gauge Tip
- 1 - Saline Wound & Eye Wash
- 1 - Elastic Bandage Self-Adhering, 2 inches
- 3 - Triple Antibiotic Ointment
- 6 - Antiseptic Wipe
- 2 - Alcohol Swab

Sprain / Strain

- 1 - Triangular Bandage

Medical Instruction / Instruments

- 1 - Pet First-Aid Manual
- 1 - Splinter Picker / Tick Remover Forceps
- 1 - Hydrogen Peroxide 3%, 1 oz.

Medication

- 2 - Antihistamine (Diphenhydramine 25 mg.), Pkg./1





TRAIL DOG

Heeler

This small pouch of medical supplies is compact enough to fit into your pocket or day pack but complete enough to be able to treat a wide variety of wounds with its anti-bacterial ointment, dressings, bandages (that won't stick to his fur), antiseptic wipes, splinter/tick remover, and antihistamine. It weighs under 1/5 of a pound and

measures a scant 6.75 x 1.5 x 6.5 inches. The pack is waterproof and re-sealable.

Heeler Contents:

Wound Care

- 2 - Sterile Non-Adherent Dressing, 2 x 3 inches
- 1 - Conforming Gauze Bandage, 2 inches
- 2 - Antibacterial Hand Wipe
- 1 - Elastic Bandage Self-Adhering, 1 inch
- 1 - Triple Antibiotic Ointment

- 2 - Antiseptic Wipe
- 1 - Triangular Bandage (See Instructions For use As Muzzle)
- 1 - Pet First Aid Manual
- 1 - Splinter Picker / Tick Remover Forceps
- 2 - Antihistamine (Diphenhydramine 25 mg.), Pkg./1



HEELER

adventuremedicalkids.com | Me & My Dog, \$50; Trail Dog, \$25; Heeler, \$10

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- ▲ Black Kote Finish
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- ▲ Black or Green G10 Scales
- ▲ Flipper
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- ▲ Deep Carry Tip Up or Tip Down
- ▲ Lanyard Attachment

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Never Starve

You are organized. You planned ahead. You're prepared for everything, but you didn't plan on the fire. Your BOB in the trunk of your car burned up with everything else when your overheating car turned into an inferno. You barely made it out yourself, and now you're stranded alone and in the worst situation possible: no water, no food, and no help. You're on your own, and your stomach is beginning to growl.

Maybe it isn't obvious right now, but you are literally surrounded by food, as long as you expand the commonly held definition of what you consider food. On day three, a lizard might still just be a lizard, but by day nine, a lizard is a porterhouse steak.

**IN ANY
ENVIRONMENT,
FOOD IS ALL
AROUND YOU**

Story by **Dana Benner**





FOOD IS ALL AROUND

When “Survivor” first premiered, every episode showed people “stranded” in some remote place nearly starving to death despite the wild grocery store that surrounded them. Insects and reptiles scurried through the underbrush while monkeys scampered through the tree branches. All I could do was laugh. But what isn’t funny is that every year there are people who find themselves in a wilderness survival situation. Many times the people starve to death and there is no reason for it.

Food of all types surrounds us if you know where to look.

This lesson came to light while watching “Survivor.” One of the contestants caught a bunch of grasshoppers, which he was using as bait in an effort to catch a fish. Though this was a good idea, after a few hours with nothing to show for it, the man was just wasting time and energy. My daughter turned to me and said, “Why doesn’t he just eat the grasshoppers?” That was a good question and the logical choice, but the man didn’t do that and spent another night hungry, overlooking the obvious source of nutrition from the grasshoppers. To that contestant, grasshoppers weren’t food.

How wrong he was.

Growing up my father always told me, “If it walks, flies, swims, or crawls, you can eat it.” While it is an apt lesson about the availability of food in a survival situation, it needed some modification. You cannot eat everything that walks, crawls, swims, or flies, because many insects, as well as some reptiles and fish, are highly toxic. If you are unfamiliar with the area you find yourself in and the different wildlife that lives in that environment, please use extra caution before eating anything. If in doubt, pass it up.

FINDING EASY FOOD

Countless times we hear of the use of spears, traps, and snares, but what happens if you are unable to construct these devices or you don’t know how they work? Are you destined to starve? The answer is a resounding “No.” Birds, small rodents and fish can be difficult to capture without the use of traps or snares, but nature is full of animals that are easy to obtain. In a survival situation, the creatures you should be going for are those that will require the least amount of energy to catch. If you burn more calories hunting for food than you take in, you are defeating the very purpose of eating. The environment you are in will dictate what you should pursue.

Note: Be advised that many animals are protected by both state and federal laws. To kill or harm any animal, no matter how small, could be illegal. All of the information presented here is for emergency survival only.



PHOTO BY DANITA DELMONT/GETTY IMAGES

WETLANDS

Where there is water there is food. An environment with water is the ideal situation in which to be stranded.

Both fresh water ponds, small lakes, streams, and marshes will provide such edibles as both mature frogs and tadpoles. There may also be fresh water mollusks such as snails and mussels.

River snails or freshwater periwinkles are plentiful in rivers, streams, and lakes of North America. Look for them in the shallows, especially in water with a sandy or muddy bottom.

Search the low hanging bushes for birds' eggs or even baby birds. Don't pass up a turtle or a snake that you happen upon. However, a word of caution: Unless you know the different species of snakes found in the area you are in (harmless vs. venomous), avoid snakes. You

also need to be wary of snapping turtles and in some areas, the box turtle, which feeds on poisonous mushrooms and may build up a highly toxic poison in its flesh. Cooking does not destroy this toxin. Streams are a great source of food such as crayfish and small fish may be taken out of small, shallow pools.

If you find yourself around the ocean, your food choices are even better. You will find salt-water shellfish such as snails, clams, mussels, bivalves, barnacles, periwinkles, chitons, and sea urchins. Many birds found along the coast nest on the ground, so take advantage of this. Tidal pools are great places to find many varieties of saltwater snails, small crabs, and sea urchins. Attached to rocks you will find mussels. Most every fish with fins can be eaten.

COOKING WILD FOODS

» You've caught dinner, so now what? If you have your pack with you, you will have a piece of aluminum foil. You can take this piece of aluminum foil and form it into a bowl. This will now form a cooking pot. If not, the world is littered with trash and you might be lucky enough to find an old beer can or a discarded tin can. Barring that, find a thin rock that can be used as a frying pan.

Insects like grasshoppers, crickets, scorpions, ants, and termites can all be eaten raw. Things such as frogs, shellfish, fin fish and birds' eggs should be cooked before eating.

When you get back to your makeshift camp, go over the food that you have gathered. Shellfish, like mussels, should have their shells closed. If any of them are open discard them as they are not safe to eat. If the shells are closed then just place them in your bowl and put the whole thing in the coals at the edge of your fire. You can also

"ON DAY THREE, A LIZARD MIGHT STILL JUST BE A LIZARD, BUT ON DAY NINE, A LIZARD IS A PORTERHOUSE STEAK."

PHOTO BY THINKSTOCK



just set them on a flat rock at the fire's edge. Once the shell pops open they are ready to eat.

Reptiles, amphibians and fish need to be cleaned before cooking. Once cleaned they can be skewered on a stick and cooked over the fire. Turtles can be placed in the hot coals and cooked right in the shell. Birds' eggs can be broken open and cooked on a flat rock. Earthworms and grubs can be eaten raw or added with other wild edibles to make a soup.

VALLEYS AND MOUNTAINS

Inland areas of high and dry ground present their own opportunities. Open fields yield grasshoppers and crickets, both of which are edible and a great source of protein. In the forest, among the leaf litter and undergrowth, earthworms and slugs are readily available. Search rotting logs for termites, ants, and grubs. Insects are the most abundant lifeform on earth and can be easily caught. Look for rotting logs, stones, branches, and anything on the ground that might provide a good hiding place. Worms too are a great source of protein. After collecting them, place them in some clean water, where they will clean themselves out. After that, bon appetit.

PHOTO BY DAVID KIRKLAND / GETTY IMAGES

You may also come across small frogs and salamanders. Both are viable options as a food source, though some salamanders may be toxic. Rule of thumb is if it has bright colors it is likely toxic. Always error on the side of caution. As disgusting as it sounds to us, all of these critters are eaten by people around the world on a regular basis. You won't gain weight by eating worms and crickets, but you will stay alive.

Consider birds' eggs and baby birds in the nests. Most forest-dwelling birds build nests out of reach of predators but if you stay observant, you may find some at an elevation you can reach.




PHOTO BY MARCOSIER / GETTY IMAGES

DESERT REGIONS

In the desert food can be more difficult to find and more dangerous once you do. The desert is a harsh environment, and the animals that live there are well adapted at protecting themselves from being something's next meal, including you. Insects are a great choice, as are lizards. Many lizards will be found sunning themselves on rocks, but so do venomous snakes, so be careful.

With that said, scorpions and other edibles can be found under rocks. If you do find a scorpion, pin it to the ground with a stick and, using your knife or a sharp rock, cut off the tail and stinger as that is the dangerous part. Pull off the shells and cook over the fire.

SUMMARY

While this is not what anyone would call "fine dining," it will keep you alive in an emergency situation. Hopefully, you did all of the right things before venturing out, like letting someone know where you were going and when you would be back; also that you are carrying your pack with the gear you would need to survive, including some food. If you did these things, chances are you won't be forced to eat earthworms and scorpions. If that's not the case, keep your wits about you and understand that, no matter where you are, you are surrounded by food. 

"WHILE THIS IS NOT WHAT ANYONE WOULD CALL 'FINE DINING,' IT WILL KEEP YOU ALIVE IN AN EMERGENCY SITUATION."

Toxic Terrors

» Usually people are scared of the business end of the animal, the teeth and claws of mammals, or the quills and barbs of some fish. However, many creatures you may come across in a survival situation have many more tricks to keep potential predators at bay. Simply put, they're poisonous. Here are eight of the most poisonous animals from around the world you'd do best to avoid. Many of them live in and around Australia, where everything is designed to kill you.



Blue-Ringed Octopus

Ironically, the bite of this octopus doesn't hurt, but the toxins in its saliva will eventually kill you. First, you will feel a numbness around the bite and that numbness will spread throughout the body. Soon, it will reach the muscles that control breathing and you will die.



Box Jellyfish

Accidentally contact the tentacles of the Box Jellyfish (found in western waters of the Pacific Ocean), and you will experience excruciating pain for weeks, as its venom can stop the heart or paralyze the lungs, as well as eat away at the skin.



Death Stalker Scorpion

Found in North Africa and the Middle East, a sting from the Death Stalker Scorpion causes tremendous pain and a fever. If untreated, you will become paralyzed, slip into a coma and die. It is the most toxic scorpion in the world.



Inland Taipan

The Inland Taipan, native to Australia, is considered the most poisonous snake on earth. One bite contains enough toxin (about 110 milligrams per bit) to kill nearly 100 people. Its toxin can cause vomiting and will eventually stop a human from being able to breathe.



Marbled Cone Snail

Sure, it's easy to catch because it is a slow-moving snail found in coral reefs around the world, but the sharp "tooth" on the end of its nose can lash out quickly and deliver an immediately paralyzing sting. When the paralysis reaches the lungs and heart of a human, death follows.



Poison Dart Frog

From the rainforests of Central and South America, the Poison Dart Frog's skin contains a toxin that has the ability to kill anything that touches it. And it only takes a very small amount to bring down a large animal, sometimes even a human.



Stonefish

Looking like a piece of rock or coral, the Stonefish is found in Pacific Ocean around Australia and attacks nearby fish from its camouflaged position with its 13 toxic filled spines. In humans, the venom causes pain, swelling, shock and, eventually, death.



Sydney Funnel-Web Spider

Large and aggressive, the Sydney Funnel-Web Spider is found in Australia and has the most venomous toxins of any spider. A single bite causes great pain and can kill a person in under 15 minutes.

Story by **Bryan Dumas**

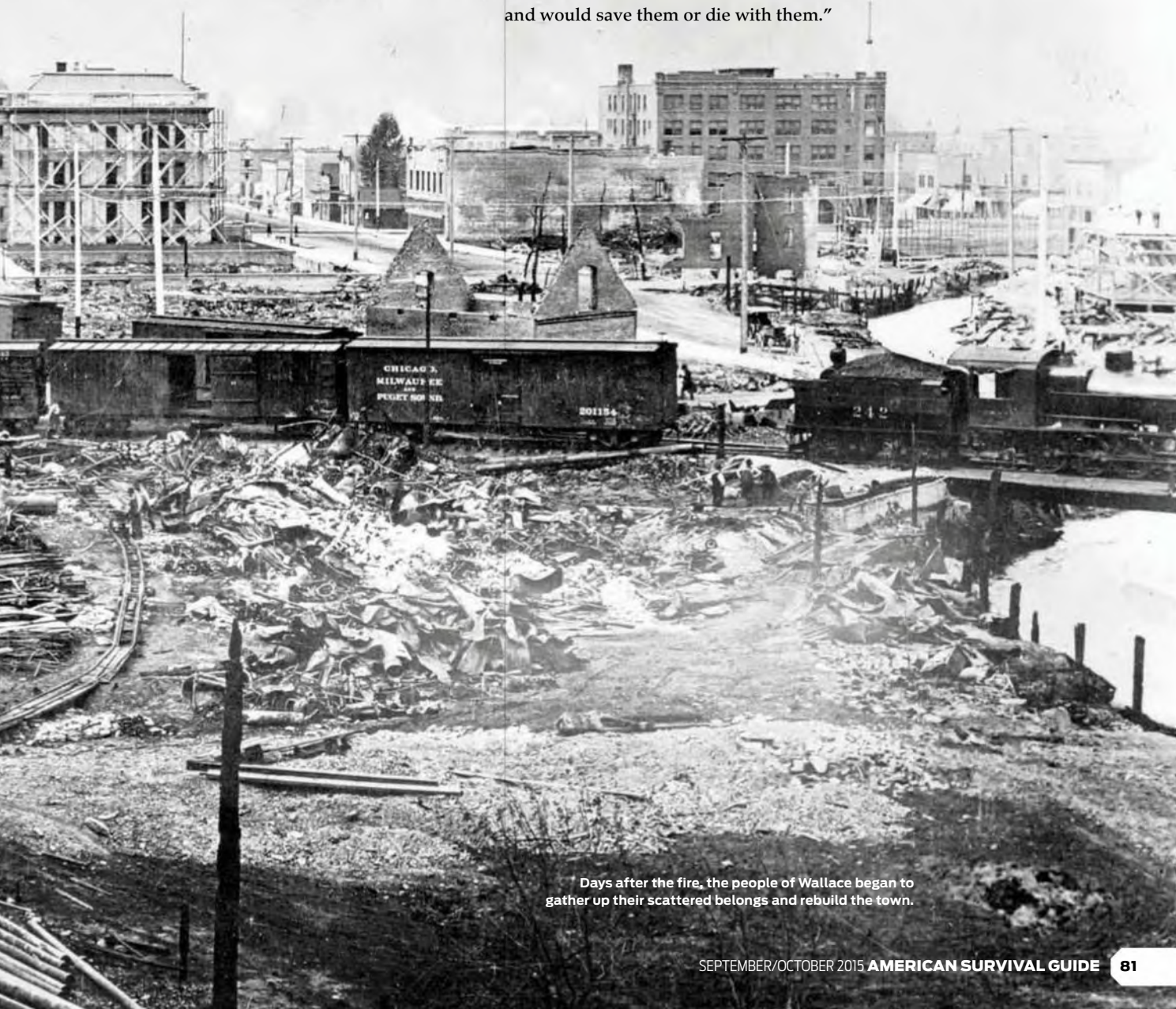
Photography courtesy University of Idaho and Historic Wallace Preservation Society



The Big Burn

THE 1910 INFERNO OF
COEUR D'ALENE
NATIONAL FOREST AND
ITS HERO, ED PULASKI

In the early morning of August 21, 1910, Emma Pulaski, wife of one of America's first forest rangers looked around the charred remains of Wallace, Idaho, and the still smoking hillsides and was certain that her husband had died in the firestorm the night before. "The flames leaped all through the mountains until it seemed as though hell had opened up with all its horrors," she would later write. "Mr. Pulaski was some where [sic] in those burning mountains and all though [sic] he knew every foot of the ground and could have saved himself, I knew he would not desert his men and would save them or die with them."



Days after the fire, the people of Wallace began to gather up their scattered belongs and rebuild the town.

**"HOW HE SURVIVED IS
A TESTAMENT TO HIS
DEVOTION TO HIS MEN
AND HIS WILL TO LIVE
AGAINST ALL ODDS."**



Edward Pulaski, in the 1950s, near the mining shaft where he led 40 men to safety. (below) Emma Pulaski and her (and Ed Pulaski's) daughter Elsie. They barely survived the fire in a mining debris field south of Wallace.



Off in the distance, the fire grew larger and larger. Taken at Beaver Creek near Avery.

MASSIVE FIRE

What had engulfed the tiny Idaho town of Wallace would later be called the Great Fire of 1910. It was a forest fire of staggering proportions. In two days, August 20-21, over three million acres burned in Idaho (panhandle), western Montana and eastern Washington; an area roughly the size of Connecticut. At least 85 people died—78 of those were firefighters. Seven towns were burned completely off the map. All of this puts the Great Fire, also called the Big Burn or Big Blowout of 1910, as the largest forest fire in U.S. history in size; though others would surpass it in death toll.

Even though the fire had decimated so much, not everything was lost, and, like the firefighters of the Forest Service crawling out of the smoky valleys, out of the embers stories of heroic survival emerged. One such story is that of Ed Pulaski whose wife recalls watching limp down the road with the help of another man. He "was staggering," she wrote in the 1930s in a short article called "My Experience as a Forest Ranger's Wife." "His clothes coated with dry mud, his eyes bandaged, he was blind and terribly burned, his hands and hair were burned and he was suffering from the fire gas." How he survived is a testament to his devotion to his men and his will to live against all odds.

EMBERS SPARKED

The summer of 1910 had been a hot one. The winter snow melted early and the Pacific Northwest had not seen rain since May. In fact, 1910 was the third consecutive year of a drought that swept across the entire Northwest. Joe Halm, a Forest Ranger and Deputy Supervisor in the Coeur d'Alene National Forest at the time of the Great Fire, described those late August days as having "an ominous stifling pall of smoke" hanging over the valleys. Around him and the other rangers were anywhere from 1,000 to 3,000 small fires some started from sparks from passing trains, others from lightning, but all demanding the attention of the undermanned Forest Service.

"For weeks forest rangers with crews of men had been fighting in a vain endeavor to hold in check the numerous fires," Halm would write in 1930. They worked in high mountain meadows that once abounded in fragrant wildflowers, but were replaced by the "tang of dead smoke." The plants stood "crisp and brown, seared and withered by the long drought."

Men labored side by side digging trenches with rudimentary tools hoping to encircle the fires and contain them. With blood red eyes and lungs that burned and begged for untainted air, they worked in an

eerie pall of smoke where the sun rose and set in a dark red hue. "All nature seemed tense, unnatural, and ominous," Halm wrote.

RISE OF A HERO

And it was into that unnatural world that Ed Pulaski set off on the morning of August 20th. He'd come into Wallace for more supplies for his crews in the woods surrounding Wallace, and spent a few hours with his wife and daughter. Soon, the mountains around them erupted into flame and the Forest Supervisor in Wallace, William Weigle, instructed Pulaski to return to the fire lines with more men and supplies. Pulaski looked at his wife and told her that he was certain that Wallace would burn. He wanted her to leave before then. Together they went to the edge of town and, according to Emma, Mr. Pulaski "said good bye I may never see you again he went up the mountain and we went home."

Ed Pulaski had an adventurous spirit and that spirit would serve to save him and his men. Born in 1884 in a small town in Ohio, Ed was lured West by letters from an uncle working in the gold fields and boisterous mining camps. "Big Ed" as he was called—he stood a towering six foot four inches—roamed the West picking up blacksmithing skills while he worked as a packer, mine



Trains arrived and left Wallace going in two directions. As townsfolk pushed their way onto the train cars, volunteer firefighters disembarked.



Ranger Ralph Debit (far left) and the soldiers of Company G of the 25th Infantry Regiment from Fort George Wright in Spokane, Washington.

Wallace burned for two days and two nights.





The south side of Wallace was completely leveled by the walls of flames.



With smoke still in the air, the town of Wallace was in ruins.

laborer, and in the lumber camps of Idaho. His supervisor, William Weigle, wrote that Ed "is a man of most excellent judgment; conservative, thoroughly acquainted with the region, having prospected through the region for over 25 years. He is considered by the old timers as one of the best and safest men to be placed in charge of a crew of men in the hills." Despite the respect afforded him, Ed Pulaski was an enigmatic and reserved man.

Pulaski was tasked with organizing the many crews fighting the various fires around Wallace. He went from camp to camp giving directions as to how to fight each fire. He was also responsible with making sure that the pack teams were making their way into mountains, into the heart of the flames, bringing vital equipment and supplies to the beleaguered men. As he went deeper into the forest he knew so well, the landscape changed into an unfamiliar, haunting world. "For weeks there had been no rain and the woods were drier than I had ever seen them," he would later say. Around him were "crews of several hundred men working 24 hours a day throughout the mountains, endeavoring to hold back the fires."

NO ESCAPE

However, their efforts would be futile. "Although we worked day and night and did everything that could be done to control the fires, little headway was made because of the dryness of the forest and those strong winds." By the evening of the 20th, hurricane force winds swept across the mountains and swirled the many smaller fires into one mas-

sive, raging inferno. According to Pulaski, “the wind was so strong that it almost lifted men from the saddles of their horses, and the canyons seemed to act as chimneys, through which the wind and fires swept with the roar of a thousand freight trains.”

Nearby, Halm and his men were experiencing the same thing. “Meanwhile the wind had risen to hurricane velocity. Fire was now all around us, banners of incandescent flames licked the sky. The quiet of a few minutes before had become a horrible din.” Both supervisors were faced with a fire that was beyond control and men who were now becoming delirious with fear.

Pulaski knew that staying and fighting the fire was foolhardy at best. His only option was to rescue as many men as he could.

TO THE MINESHAFT

“I got on my horse and went were [sic] I could, gathering men.” Most of the men in his group were unfamiliar with the territory, so he knew that it would be up to him to lead them out to safety. Eventually, Pulaski was able to gather 45 men, his voice hoarse from yelling over the noise of the wind and fire, and directed them to follow him out of the “raging, whipping fire.”



What's left of the Coeur d'Alene Hardware warehouse in Wallace after the fire swept through town. (below) Trees flattened and charred from the firestorms.

“MOST OF THE MEN IN HIS GROUP WERE UNFAMILIAR WITH THE TERRITORY SO HE KNEW THAT IT WOULD UP TO HIM TO LEAD THEM OUT TO SAFETY.”

THE PULASKI

» When a wildland firefighting team is deployed into the field, there is one tool that nearly every firefighter will bring with them: a pulaski.

Created in the years that followed the Great Fire of 1910, the pulaski has become an essential piece of firefighting equipment from its adoption by the Forest Service in 1920 through to today.

Named for its creator, Ed Pulaski, the tool is a combination axe on one side and adze (hoe) on the other, and allows the firefighter to both chop down trees and clear brush with the simple flip of the hand.

Ed Pulaski was a deputy forest ranger supervising teams in the Wallace, Idaho area of the Coeur d'Alene National Forest

Reserve. Prior to joining the Forest Service at age 40, Pulaski spent years in the backcountry as a miner and lumberman, and as a blacksmith and construction worker. He quickly rose to national fame in the aftermath of the Great Fire of 1910 through his quick thinking which saved the lives of thirty-nine men.

Prior to the creation of the pulaski, forest service volunteers—made up of over-eager college-aged men, unskilled immigrants, and even the local drunkard yanked from the tavern and pressed into fire-fighting duty—used whatever tool they had at hand. Often this meant mining tools or lumber tools. What Pulaski quickly realized was that there was a need for a single tool that combined both worlds—mining and lumber.

There is evidence that similar tools had been used since the late 1800s by farmers to clear land, but these tools

often were an axe and shovel combination. In his blacksmith shop Pulaski improved on the previous designs by removing the shovel and replacing it with an adze that could be used to clear land, cut through tough roots, and move large rocks. In a pinch, the pulaski could even be turned sideways and used as a light sledgehammer.

Drawing from lessons learned during the Great Fire of 1910, Pulaski spent the next few years designing and improving on his own designs until, in 1920, the Forest Service adopted the pulaski as the singular tool that every wildland firefighter would carry with them into the field.

Pulaski thought about but never patented his creation, and he probably never saw a dime for it.

The prototype of Ed Pulaski's creation is in the Wallace District Mining Museum in Wallace, Idaho.

10.15

The entrance to the War Eagle Mine where Ed Pulaski led 40 men and two horses to escape from the fire.



**“...HE
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He quickly decided that their best bet for survival was one of the many abandoned mine shafts that dotted the hillsides. Ordering the men to gather blankets that could be used to block the mine entrance, he daringly led the men though burning, falling trees and a smoky darkness that made it nearly impossible to see. They raced for the nearby mine. Pulaski notes that one man was killed on the way by a falling tree, but they “reached the mine just in time, for we were hardly in when the fire swept over our trail.”

Pulaski ordered his men to the ground to escape the smoke and fire gas. One man, desperate and crazed, tried to run out of the tunnel into certain death. Pulaski drew his revolver, told the men that no one would leave, and the first one that tried to get out

he’d shoot. “I did not have to use my gun,” he said. The fires outside the tunnel were so intense that the mine timbers caught fire. Pulaski began to hang wet blankets over the opening, but those would eventually catch fire and he’d have to replace them. Behind him, the men were crying, praying and a few lost consciousness due to the heat, smoke, and gasses.

Eventually, Pulaski fell unconscious at the mine entrance. “I do not know how long I was in this condition, but it must have been for hours.” Regaining consciousness, he remembers hearing men standing around him saying, “Come outside boys, the boss is dead.”

He raised himself up, took a deep breath of fresh air, and said, “Like hell he is.”

Parched, the men went down to the creek for a drink, but found that it was filled with ashes and too hot to drink. Grateful to be alive, the men looked around the bleak, smoky landscape and did a quick head count. Five men were missing. They returned to the mine and found that they had died. The remaining men walked, and at times dragged themselves on hands and knees, over still burning logs and smoking debris toward Wallace.

"We were in a terrible condition," Pulaski said. "All of us hurt or burned. I was blind and my hands were burned from trying to keep the fire out of the mine. Our shoes were burned off our feet and our clothing was in parched rags."

Once in Wallace, and his men safely in the various hospitals, all Ed Pulaski could think about was his wife and daughter, especially after seeing that much of Wallace had burned. Only after hobbling down the road with the help of another ranger and seeing that Emma and his daughter Elsie were well did Ed Pulaski finally retire to a hospital bed.

THE SURVIVORS

Of the 45 men that Ed Pulaski was able to round up, 39 survived thanks to his quick wits and his intimate knowledge of the area surrounding Wallace. Ed Pulaski spent two months in the hospital dealing with blindness and pneumonia. He would eventually regain sight in one eye, but he was left with weak lungs and scars that he would carry with him throughout his years in the Forest Service. He never received compensation from the U.S. government for his injuries. Worse still, the Forest Service refused \$435 in funds for a memorial designed by Pulaski dedicated to the men who had died in the Great Fire, claiming that it would have taken "an act of Congress."

He retired from the Forest Service in 1929, and he died two years later.

Though the fire devastated the towns of Wallace, Burke, Kellogg, Murray, and Osburn, towns like Falcon, Grand Forks, Henderson, and Taft were completely destroyed and never rebuilt. The big burn killed 87 people, burned thousands of acres, and is still considered the largest forest fire in the history of the United States. It not only helped to elevate fire fighters as heroes, but the big burn brought to the forefront an enlightened concept of forest conservation as well as the government funds necessary to develop and maintain a properly-equipped National Forest Service in the United States. ■■■

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Sweet Survival

HOW TO MAKE MAPLE SYRUP AND REAP ITS BENEFITS IN TRADE

Story and Photography by **Clint Jivoin**

When faced with a short-term wilderness survival scenario, food is typically not a priority until all other urgent physiological needs are met. In a long-term wilderness living scenario priorities and goals are likely to change as you settle into an off-grid homestead or woodland shelter. In a long-term situation things you make at home could hold enormous value in trade. The knowledge to source and obtain resources directly from the land is paramount in the quest for long-term self-sufficiency. These resources can lead to the creation of items like maple syrup.

If you have something to offer that nobody else has, its value will skyrocket. Shells for sugar? Meat for Syrup? Creating value in your cache is an important element to survival. Do so with maple syrup.

FLAVORS OF THE FOREST

The harsh reality is that wild food typically tastes different from the domesticated crops, livestock, and the store-bought processed garbage most of us have grown accustomed to eating. The average modern American diet consists largely of fats, salts, and sugars. In the wild, these are three of the hardest things to obtain by simple means. These flavors we have grown to expect are often seasonally or regionally specific and can be difficult to obtain or stockpile for year-round use without modern tools and domesticated livestock.

This is why even a lean venison back strap that was cooked to perfection will often taste "gamey" to that city slicker buddy of yours and he will likely reach for his favorite steak sauce or seasoning...typically one that is loaded with salt.

PHOTO BY JONATHAN KIM / GETTY IMAGES



**"IF YOU HAVE SOMETHING TO
OFFER THAT NOBODY ELSE HAS,
ITS VALUE WILL SKYROCKET."**



TAPPING

In a pinch, the sap of non-poisonous trees can make an excellent source of readily available clean drinking water. The inner layers act as the circulatory system of the tree by pulling water from the ground up the trunk of the tree to its extremities in the form of sap. The sap of sugar maple trees contains a much higher concentration of sugars than other trees such as sycamore. Estimates vary depending on who you ask, however, a good rule of thumb is that 40 gallons of sap will produce about one gallon of finished syrup.

Drilling a small hole or tapping a tree will pierce these inner layers and allow the sap to leave the tree so that it can be collected. The tree sap typically flows best from about mid February to late March when nighttime temps are still low and the days are warm and sunny. As the sun and daytime temperatures warm the tree in the morning the sap will begin to flow up the trunk of the tree. It is for this reason the sunny side of the tree will often flow better in the morning. A hand drill will prove very helpful when tapping numerous trees but commercial tree taps can be purchased and are very effective; however, they aren't completely necessary.

Once you've selected a tree, bore a hole through the outer bark and into the cambium layer of the tree. The required depth of the hole varies from tree to tree so drill a couple inches and clean any debris out the hole to check and see if the sap is beginning to flow. Once satisfied that you've drilled far enough, hammer the tap into the hole with the back of an axe or heavy stick and hang a collection container of some sort from the tap itself. Five gallon buckets or empty milk jugs with an attached hanging wire work great for this.

To tap a maple tree in a survival scenario, bore a hole with your knife. You will likely not be able to drill very deep with your knife so cutting a V shape into the tree will allow more sap to flow

into a concentrated area to be collected.

Wedge a small piece of flat wood or a twig into the base of the V so that the sap drips away from the tree and into your canteen or cup.

THE FIRST BOIL

After leaving the buckets to collect sap you'll want to check them regularly. Keeping the buckets covered will help to keep debris, bugs, and the occasional mouse out of the sap. Checking tapped trees first thing in the morning is typically sufficient. After collecting the previous day's sap, empty it into a separate set of buckets or holding containers so you can continue to

Bartering with Sugar

Bartering played a huge role in the past and will likely play a huge role again at some point in the future. Things like spices, sugars, and cooking fats with likely yield a high demand as more and more families are forced to become self-sufficient. Over time, eating only bland tasting foods can have negative effects. Nobody wakes up in the morning looking forward to a long day of work after having a not-so-hearty breakfast of leaves and hot water.

Sweeteners can make even the blandest of wild teas a delightful treat and people will certainly be willing to trade other useful goods for a hot cup of humanity they can look forward to each morning. Maple syrup is a natural resource that can be obtained with relative ease in the spring time in certain parts of the country and its regional limitations make it an ideal trade good. The current price of true 100 percent natural maple syrup in a grocery store says it all. Money doesn't grow on trees but it does flow through them, and with a couple trees, a few containers, and a little patience you can collect maple tree sap and turn it into syrup for trade or personal use.



1. A hand drill is used to tap a 1/4 inch hole a few inches into a maple tree. Notice the hole is drilled at a slightly upward angle to allow gravity to guide the sap into the metal tap.
2. Once the hole is drilled into the tree, any wood shavings are removed to ensure maximum sap flow. This is also a good way to check the speed of sap flow and the sweetness of the sap itself as sugar concentration tends to vary from tree to tree.
3. Using a heavy stick, a tap is hammered into the bottom of the hole. Commercially-made taps work best but in this case a rope tensioning device will get the job done!
4. In a survival scenario you may not have a large container for collecting sap. Use and modify whatever you can to get the job done. This stainless steel bottle cup worked great for collecting enough sap to drink throughout the day as a water source and there was plenty of sap at the end of the day for this project.
5. The collected tree sap is poured into a Number 12 cast iron Dutch oven and suspended from an adjustable tripod. Keeping the lid off during boiling allows for maximum evaporation. Try to keep the sap at a slow rolling boil for best results.
6. With about half of the water removed the sap is thicker and has a darker amber color. If boiling in cast iron you can expect a darker color due to the seasoned cast iron. This seems to give the syrup a smokier flavor, which some folks prefer.
7. The sap is cooled and strained into the stainless steel cup and then cooked at a low temperature suspended high above the coals of the fire to prevent burning the syrup.
8. The old bottle was found in the woods nearby and cleaned out using sand and water before being sterilized by boiling it in the Dutch oven while the syrup is being finished.
9. With the syrup dark in color and at a slow bubble it is removed from the fire and allowed to cool.
10. Once the syrup is cooled, it is then bottled and corked. This syrup was intentionally left slightly watery making it slightly less concentrated for use and a natural sweetener for wild teas. This amount of syrup was the result of a full Dutch oven's worth of sap.

collect additional sap while you're boiling. If you plan to use a fire to boil your sap, build a fire near the tapping site for the continued ease of transporting sap to the fire. A simple adjustable tripod setup works fantastically for boiling sap as a slow even boil is desired to prevent burning the syrup during the finishing process.

A Number 12 cast iron Dutch oven works well as a boiling pot, as it can be easily suspended over the coals of the fire and will slowly heat up for a slow even boil. If there is particulate, such as leaves or tree bark in the sap, it can be strained thru a piece of cloth such as a bandanna before being transferred to the boiling pot. Once the fire has burned down to an even coal bed, place the boiling pot on the tripod and lower it over top of the coals. As the sap boils the water evaporates, leaving the sugar behind.

The remaining sap will become thicker as the sugar content rises, becoming amber-colored and releasing a heavenly aroma. Take caution not to overcook the sap on the first boil. Once the sap begins to thicken, remove it from the fire and allow it to cool or add more sap. If you choose to remove it from the fire, pour the cooled sap into another holding container such as the stainless steel cup of your canteen.

FINISHING THE SYRUP

With the second holding container full of half-rendered sap it can now be suspended from the tripod and cooked at a low heat to finish the

sap without burning. From this point it's a slow process to get the majority of the remaining water to evaporate out of the sap so that you're left with only syrup. If the sap is cooked too hot or too fast it will solidify to the bottom of the boiling pot and you'll have to start over.

Personal preference also plays a part in finishing the syrup. If you prefer a watery syrup you don't have to boil it all the way down, however, if you're planning to store it without canning or refrigeration, it's a good idea to remove most of the water.

Once your syrup reaches the desired sweetness and consistency, strain it off into a bottle or jar using a piece of cloth to remove any remaining debris or ash from the fire. Store it in a cool dry place until you can no longer resist the urge to pour it over some pancakes.

NATURE'S SPORTS DRINK

As you will discover, it takes a lot of maple sap to make a pancake's worth of syrup. This project shows it can be done with a few common tools and containers that you may have lying around a temporary camp. Making large quantities of maple syrup with larger scale pots and buckets is much more practical for a long-term scenario. Producing syrup with minimal equipment is a fun camp project and the sap itself is essentially nature's sports drink. ■■■



Mile-High Redemption

SOLKOA'S SMALL KIT FOR WHEN YOU'RE IN A TIGHT SPOT

Story by James Whitmore | Photography by Henry Z. De Kuyper



Chris Sylvia was hiking in a particularly rugged area of the Palomar Mountains in western Riverside County, California. On February 16, several days into his journey, 28-year-old Sylvia abandoned his gear on the trail to trek up a nearby hillside to call a friend, reporting in that he was near his rendezvous point. That was the last time anyone heard from him; he never reached his final destination and his body was never found. Authorities claim he was unable to find his way back to where he left his gear, got lost, and succumbed to freezing temperatures of the winter desert.

Though Sylvia's demise is tragic, could it have been avoided? Carrying the correct gear for the environment you are in is an important step in circumventing disaster. Leaving the established trail without consideration for the what-ifs and the could-bes is an invitation for catastrophe, so it is recommended that you always keep on your person the proper gear for just such an occurrence, in this case, a handheld (or pocket) kit like the Solkoa Hunter/Mountain Survival Kit.

SOLKOA

The motto of Solkoa, a small veteran-owned survival equipment company based in Colorado Springs, Colo., is "Preparing our nation's best for the world's worst." They have, for the past 10 years, been providing the highest levels of our government's military programs with survival, evasion, resistance, and escape (SERE) equipment with capabilities to meet the standards to be used in the country's most clandestine operations. The very name, Solkoa, is a portmanteau of *solus*, meaning alone or uninhabited, and *koa*, which is Hawaiian for warrior.

SEPTEMBER/OCTOBER 2015 AMERICAN SURVIVAL GUIDE 93

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- Lightweight Day/Night Mirror
- Rescue Whistle, SOLAS
- Hi-Vis Flagging Tape, 4 feet
- LED Headlamp, Petzl, White/Red

- Micro Baseplate & Compass
- Romer Scale
- Small Fresnel Lens, 4x
- Waterproof Paper (10)
- Small Pencil w/ Eraser
- Waterproof Map Pouch

- Faststrike Sparking Rod
- Fastfire Tinders (1)
- Beeswax Candle, 4-plus hours
- Stormproof Matches (10)
- Wax-Cotton Tinder Tabs (4)

- Heat Reflecting Blanket, 1.5 mil.
- Bag, Waterproof, Hi-Vis, 3 mil.
- Nylon Paracord, Type III, 20 ft.
- Sunscreen Lotion, 0.25 oz. (2)
- Eye Pro, Wrap, 100 percent UV Block
- Nitrile Gloves

- Mini Multi-Tool, IDL T-10
- Duct Tape, 50 in. Mini Roll
- Kevlar Cordage, 15 feet
- Wire, Bailing, 20 ga., 3 feet

- Adhesive Bandages, assorted
- Top Sponge (2)
- Antiseptics (2), Alcohol (2) & Iodine (2)
- Antibiotic Ointment (2)
- Topical Ointment, Burn & Itch
- Micro EMT Shears
- Pain Relief Medications
- Anti-diarrheal
- Scalpel Blade
- SWAT-T Tourniquet
- HemCon Guardacare 2 feet x 2 inches
- Triangle Bandage
- Personal Medication Vial

- Water Purification Tabs (6)
- Water Bags, 1 liter (2)
- Heavy Duty Foil, 1.5 x 3 feet
- Food Bar, 400 calories

For years, its equipment has been contracted with the government and not available to the general public; that is, until 2008, when they began to offer limited runs of equipment in three categories: survival kits, fire starters, and SUMA containers. Solkoa introduced the Hunter/Mountain kit, designed for use in higher elevations during a typical fall or winter hunting season. This extensive kit is will support a hunter that may need to survive a mountain climate for three or more days until a search party arrives. The kit includes over 40 components that cover all eight survival needs. It includes extra medical components for treatment of traumatic injuries.

The nylon pouch holds an orange emergency blanket, 60-cubic-inch waterproof LOKSAK storage bags, a Fastfire tinder, and the waterproof SUMA container, which holds just about everything else. The 6061 anodized aluminum container is suitable for cooking and is strong enough to be used as a digging tool. The pouch itself is available in two colors, orange or tan.

For navigation and rescue, a Solas whistle is rated at over 100 decibels, and the credit card-size signal mirror with reflective tape on its reverse are included, along with a micro base-plate compass with a romer scale, four feet of high visibility flagging tape, and a Petzl headlamp.

With long-term survival built into its design, the Hunter/Mountain kit is one of the few that provide first aid essentials with the inclusion of a few advanced medical supplies. Inside there is 0.5 grams of antibiotic ointment, a small glass pill bottle, a 2 x 2-inch medical-grade pad, SWAT-T tourniquet, EMT shears, sponges, and some bandages.

There is three feet of 20-gauge bailing wire, 50 inches of duct tape, 15 feet of Kevlar cordage and a IDL T-10 multitool wrapped in a noise-suppressing piece of inner tube. Made of stainless steel, the T-10 has three screwdrivers, a bottle opener, tweezers, wire cutters/strip-pers, a knife, file, and pliers.

Starting a fire is made easier with the NATO-type waterproof matches (with a striker), four pieces of cotton tinder tabs, a Faststrike sparking rod, and a four-plus-hour beeswax candle. The six water purification tablets are enough to clean six liters of water (included are two one-liter water bags), while 3 x 1.5-feet of heavy-duty foil can be fashioned into a bowl for cooking. Barring the lack of food, a 400-calorie food bar is at the ready.

A few surprising items are weather-resistant paper and a small pencil to take notes or write a short journal, the 1.5-mil heat reflecting blanket, sunscreen, UV-blocking eye protection film, and the scalpel blade. To keep important papers secure there is a waterproof map pouch.

There are many survival kits on the market, but you would be hard-pressed to find one as complete, compact, and useful as this one. *******

Dimensions: 8 x 6 x 2 inches
Weight: 1 pound, 12 ounces
fast-fire.com
\$194.95



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Story by **Ryan Lee Price**

FATAL

AT FIRST BITE

HOW THE **RABIES VIRUS** AFFECTS MILLIONS WORLDWIDE

YOU DROPPED YOUR COMPASS NEAR A FALLEN TREE. ABSENTMINDEDLY, YOU REACH UNDER THE DECAYING LOG TO RETRIEVE IT, AND A GUTTURAL GROWL IS FOLLOWED BY A STINGING BITE. YOU JERK BACK YOUR BLOODY HAND TO DISCOVER SIX PUNCTURE MARKS AND A SMALL FLAP OF TORN SKIN GUSHING BLOOD. LACKING A PROPER FIRST AID KIT, YOU WRAP THE WOUND IN A SCRAP OF A TORN T-SHIRT AND QUICKLY START BACK TO CAMP.

YOU DON'T KNOW IT NOW, BUT YOU HAVE RABIES... IF YOU DON'T GET HELP SOON, YOU WILL PAINFULLY SLIP INTO A COMA AND EVENTUALLY DIE.

WHAT ARE RABIES?

Popular culture suggests rabies is the harbinger of the zombie hoard, as a bite from an infected person will quickly spread the virus to others...which is sort of true. All it takes is a single bite where infected saliva gets into a new host's blood stream; however, it is extremely rare for humans to contract rabies from other humans (the only known cases have involved cornea transplant patients). Rabies is generally a zoonotic virus—meaning it is only transmitted from animals to humans—and it attacks the cen-

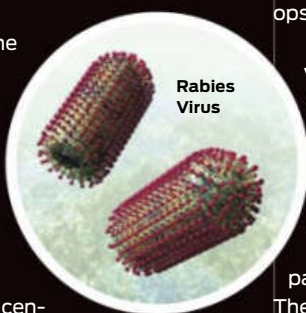
tral nervous system, causing acute encephalitis (inflammation of the brain).

The rabies virus is classified as part of Group V of the RNA-type viruses in the Rhabdoviridae family, which include vesicular and encephalitis-related diseases. It resides in the Lyssavirus genus of diseases, which gets its name from Lyssa, the Greek goddess of madness and rage. In fact, rabies means “madness” in Latin.

There are two types of rabies, furious rabies and paralytic rabies, that can occur together, by themselves or in stages (usually furious develops into paralytic when untreated).

Furious Rabies is the stereotypical type, where infected animals (and people) will be easily excitable, erratic, foaming at the mouth, and experience hallucinations that may lead to aggressive behavior.

Paralytic Rabies is slow to take effect but just as serious as furious. As the name suggests, those infected slowly become paralyzed from the bite location outwards. They will eventually slip into a coma and die.





**"...IF YOU DON'T GET HELP
SOON, YOU WILL PAINFULLY
SLIP INTO A COMA AND
EVENTUALLY DIE."**

HOW CAN YOU GET RABIES?

Rabies is transmitted through the bite or scratch of an affected animal. Depending on where you are in the world depends on the primary animal of transmission. In Asia and parts of northern Africa, rabid dogs are the primary source of the rabies virus because of the lack of animal vaccines and the prevalence of keeping animals as pets without proper preventative medical care, while in the United States, it is the bat that most spreads the virus to humans. However, from 1995 to 2013, the Center for Disease Control (CDC) reported only 49 deaths nationwide due to rabies, and all but 15 of those cases were because of a bat (there were 12 dogs — none contracted inside the U.S. — one fox, one mongoose, and one unknown).

According to the World Health Organization (WHO), over 14 million people contract rabies every year, and before Louis Pasteur and Emile Roux developed the vaccine in 1885, all human cases of rabies were painfully fatal. Today, an average of only 55,000 people die of rabies worldwide, and most of those are due to lack of proper treatment and misdiagnosis of the disease. Ninety-nine percent of these deaths are in developing countries, mostly in India, South-east Asia and central Africa.

In the United States, death by rabies is a very rare occurrence. For example, the Maryland Department of Health and Mental Hygiene reported in March 2013 of the first death from rabies in its state since 1976, while in August 2011, a U.S. Army soldier in New York complained of arm and shoulder pain, nausea, anxiety, and dysphagia and later died of rabies (from a dog bite while he was stationed in Afghanistan), the first U.S. soldier to do so since 1974 (and that was in Vietnam).

Animals That Host Rabies

» Most wild and domestic mammals are able to host and transmit the rabies virus, while some are more prevalent than others. The rabies virus is available in several distinct strains that populate certain animals, making them more or less potent when affected. Squirrels, hamsters, guinea pigs, rats, mice, and other small rodents, for example, are almost never infected with rabies and there has never been a case of them transmitting rabies to humans.



Bats: In the United States, the bat the leading cause of the spread of rabies since it was discovered they carry the disease in 1931. It was also noted that the rabies virus could be transmitted through the air in heavily populated caves. In 2006, 950 Girl Scouts were given vaccinations after reports of bats flying in their cabins during a camp in Virginia. GSA paid for the vaccines, costing nearly \$2 million.

Cats: They are more likely to contract rabies than dogs (three to one), as they are usually given free reign to travel in and out of their owner's yard, thereby putting themselves in a higher risk to come into contact with wild animals that carry the disease.

Raccoons, Skunks, Opossums: There is currently no USDA-approved vaccine for the strain of rabies that affects skunks, for example, so a bite from a skunk must be treated with urgency (capturing the skunk so it can be tested is very important). Infected raccoons, on the other hand, have been growing in numbers on the East Coast and account for 50 percent of all animal rabies cases in the U.S. since 1990, peaking in 1992 with nearly 6,000 infections reported.



Other animals in the United States that may have rabies are: cows, ferrets, goats, horses, rabbits, beavers, coyotes, foxes, monkeys, and woodchucks.

World Rabies Awareness Day

The CDC has designated September 28 as World Rabies Day in an effort to spread awareness about the seriousness of the virus and its ability to quickly cause death around the world. The CDC hopes that through education, preventative vaccines for both humans and pets, and understanding of the dangers involved in going to high-risk areas that they can reduce the number of exposures to rabies, thereby reducing the number of deaths.

While dogs are historically associated with the rabies virus, there are more cats afflicted with rabies in the U.S. each year than dogs (three times more) because of their proclivity to wander in and out of wildlife zones. More than 90 percent of the rabid animals reported to the CDC are from wildlife such as raccoons, skunks, foxes and bats. An estimated 40,000 Americans receive a rabies prevention treatment called Post-Exposure Prophylaxis (PEP) due to a potential exposure to rabies.

HOW RABIES AFFECTS YOU

A small bite by an infected animal releases a virus into your bloodstream that quickly gets to work attacking your nervous system. The symptoms are slow in showing themselves, and the virus can incubate for up to a year. Long after you've returned home, days, months, sometimes even years, you might begin to display an erratic behavior you don't understand.

Once inside a muscle or nerve cell, the virus begins to quickly replicate itself in a way that



“YOU’LL BECOME IRRATIONAL, CONFUSED, DELUSIONAL, HYPERACTIVE.”

goes mostly unnoticed by the nervous system. It travels along the nervous system pathways until it reaches the central nervous system. There it causes a swelling of the brain, which is the first noticeable symptom.

You'll become irrational, confused, delusional, hyperactive. You'll have a sudden fear of water, but can't stop salivating a foamy spit that's dribbling down your chin. From the burning sensation at the bite mark will spread a tingling numbness. Shortly, your throat will become paralyzed and you can no longer swallow. You will have trouble walking, keeping your balance, and your muscles begin to throb in a twitching ache with even the slightest movement. You'll soon lose muscle control.

You'll experience headaches, seizures, confusion, and paralysis. After the brain is infected, the virus travels to the salivary glands, where it is poised to be transmitted to its next victim.

WHAT CAN YOU DO (ONCE YOU ARE BITTEN)?

Because of the rabies vaccination and Americans' socio-economic ability to vaccinate their pets, the rabies virus has been secluded into the wilderness. The odds of you getting rabies is extremely remote, but there are thousands of

cases of suspected rabies that are treated each year from Americans travelling abroad, costing around \$300 million in health costs. Because the disease is very hard to diagnose without symptoms and once symptoms have appeared it is too late to treat, it is important to contact a doctor immediately after any animal bite, even from a pet, but especially from a wild animal.

Thoroughly washing the wound with soap and warm water for at least 10 minutes might reduce the virus in the wound and around the bite mark. Like a snake bite, stay calm to keep your heart rate to a minimum. Get to an emergency room as quickly as possible. Once there, they will administer a series of post-exposure prevention shots, repeated injections of the rabies vaccine and immunoglobulin, an antibody.

Symptoms to be looking for are fever, muscle weakness, tingling and burning at the bite mark, but remember that once you see these symptoms, there is very little chance you will survive.



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...a LOT more than ANYTHING that's not at hand when you need it. Your large, powerful, heavy, difficult to carry (fill in the blank) is of absolutely no use when you've left it at home, in the car, etc...

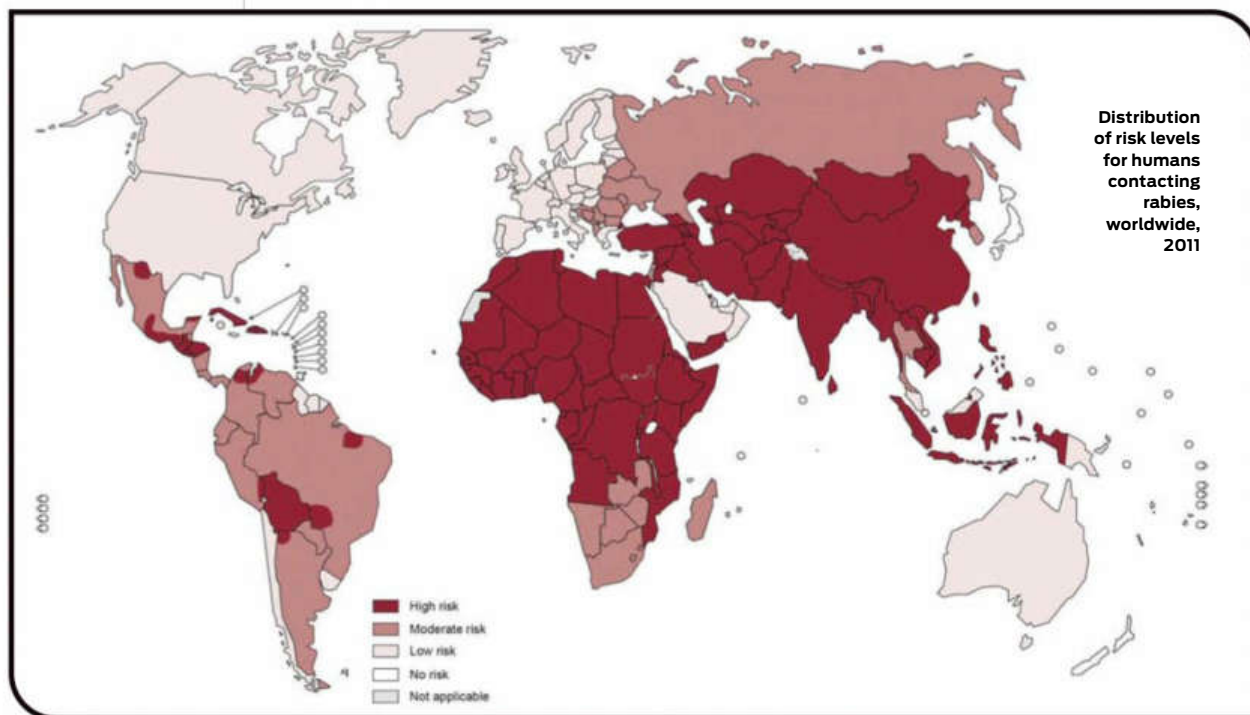
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WORLD HEALTH ORGANIZATION

2010 Reported Cases of Rabies in Animals

SPECIES	NUMBER
Raccoons	2,246
Skunks	1,448
Bats	1,430
Foxes	429
Cats	303
Cattle	71
Dogs	69
Ground hogs	32
Bobcats	30
Coyotes	11
Fishers	3
Opossums	3
Beavers	2
White-tailed deer	2
River otters	2
Squirrels	2
Cougar	1
Muskrat	1
Rabbit	1
Ringtail cat	1
Wolf	1

SOURCE: AMERICAN VETERINARY MEDICAL ASSOCIATION

PREVENTATIVE MEASURES

Like any potential survivor's situation, it is always a good idea to be proactive when you are bitten or scratched by any wild animal, regardless if you think it has rabies or not, especially avoiding raccoons, bats, foxes, and skunks. Several animals can be a host of the virus but not display any of the characteristics of having it.

When in an area where wild animals are prevalent, avoid coming into contact with them. If you see one acting strangely, contact the authorities. Typically, pets have a higher risk of coming into contact with wild animals that may have rabies than people. Cats, dogs, and ferrets that have not gotten their rabies shots and are exposed to rabies must be quarantined for six months, or put down.

If you know you are going into an area that has a large number of animals that might have rabies, like cave exploring (bats), for example, or if you are an avid outdoorsman who is around a great deal of animals, consider getting a rabies vaccine before you leave. It is a series of three shots that helps your body develop an immunity to the virus.

RABIES-FREE ZONES

There are a host of countries around the world that are considered by the CDC to be completely free of the rabies virus (in both domesticated and wild animals). Countries like Japan, Kuwait, much of Europe, and Australia and New Zealand have completely eradicated the disease through education, vaccination, and diligent surveillance of its wild animal populations. ■■■

Rabies by the Numbers

40,000

People in the U.S. treated for rabies each year

55,000

People who die from rabies worldwide

20,000

Annual deaths in India alone

\$300 MILLION

Cost to treat rabies in the U.S.

99

Percentage of deaths in Asia and Africa

92

Percentage of rabid animals that are wild

303

Number of rabid cats reported in 2010 in the U.S.

69

Number of rabid dogs reported in 2010 in the U.S.

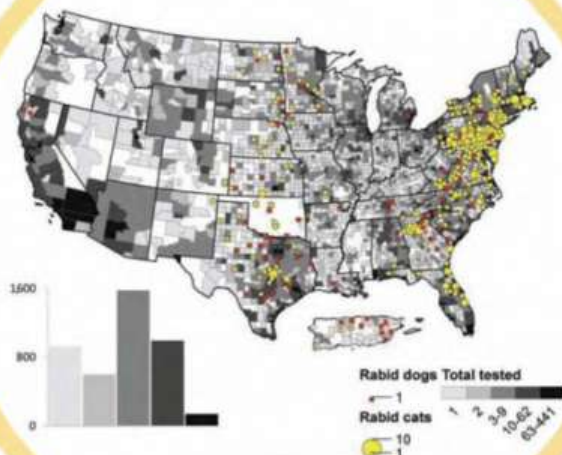
8,000

Number of rabid animals found annually in the U.S.

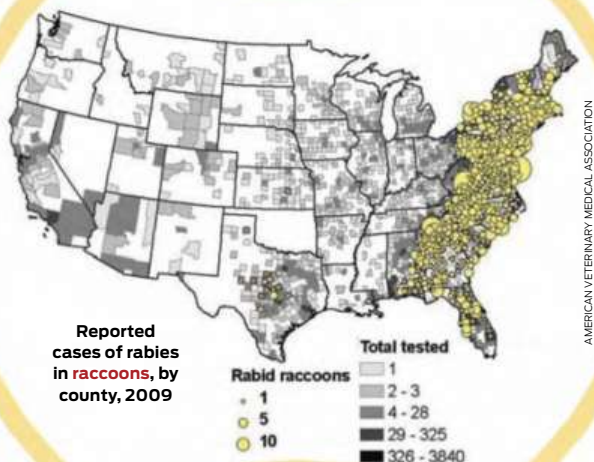
\$1,500

Cost of a rabies PEP treatment after exposure

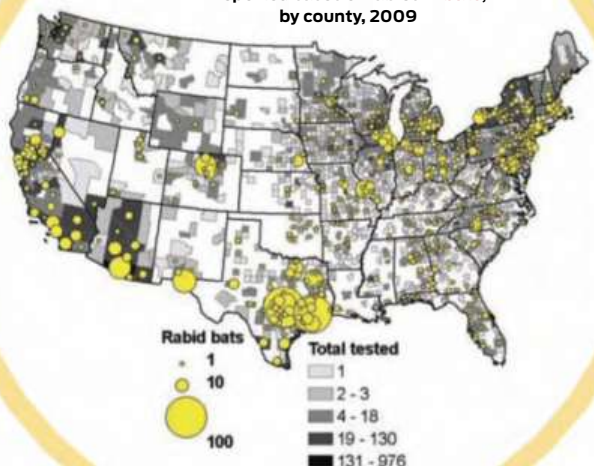
Reported cases of rabies in
cats and dogs, 2010



Reported cases of rabies in
raccoons, by
county, 2009



Reported cases of rabies in bats,
by county, 2009



The Milwaukee Protocol

» In 2004, Jeanna Giese contracted rabies when she was 15 years old after picking up a bat found outside her church in Fond du Lac, Wisconsin. Lacking education about rabies, her parents washed the wound and did nothing else. Three weeks later, Jeanna was experiencing the symptoms of rabies (she couldn't speak, stand, or walk), and it was too late to administer the anti-rabies vaccine. She was going to die. However, her doctor decided to induce her into a coma to stall the rabies from attacking her body and allow her own immune system to build up its own antibodies. They had no idea if it would work or not, but after a week, tests showed that her body was beginning to fight the rabies.

Jeanna Giese is the first person in the world to have survived the rabies virus; since 2004, there have been four others. The procedure is called the Milwaukee Protocol and was developed by Dr. Rodney Willoughby Jr., Jenna's doctor. Further tests and evaluations of the controversial procedure suggest that the survivability rate is very low, as only five out of 36 people have survived post-symptomatic rabies under the Milwaukee Protocol.

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WHY THE 1911 MIGHT SAVE YOUR LIFE ONE DAY

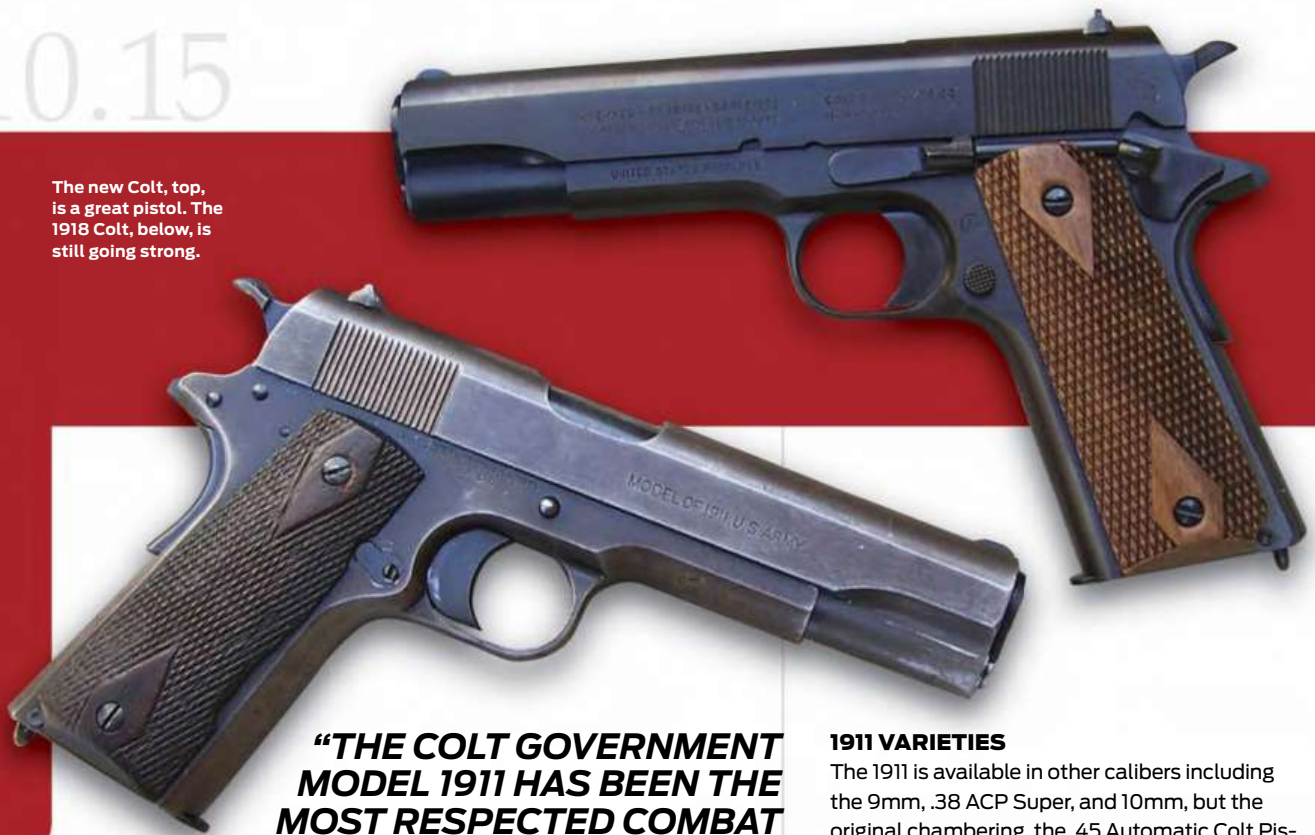
Story and Photography by **Bob Campbell** | Additional Photography by Henry Z. De Kuyper

YOU HAVE RUN OUT OF OPTIONS, CORNERED IN A DARK ALLEY THREE DAYS AFTER AN ELECTROMAGNETIC PULSE BLASTED THE INNER WORKINGS OF EVERY ELECTRONIC DEVICE WITHIN 100 MILES. MANEUVERING, FLEEING, REASONING, AND DIPLOMACY HAVE ALL BUT FALLEN ON THE DEAF EARS OF YOUR WOULD-BE ATTACKERS. YOU REACH FOR THE ONE THING THAT WILL NOW SPEAK FOR YOU, A MODEL 1911, WHOSE RACKING SLIDE SPEAKS THE INTERNATIONAL LANGUAGE OF AUTHORITY. IT MEANS BACK UP, LEAVE ME ALONE, LET ME PASS. IF NOT, IT WILL BLAZE A TRAIL OF SELF-DEFENSE, LEAVING FIST-SIZED HOLES IN ITS WAKE. IT IS THE 1911, ONE OF THE BEST EXAMPLES OF A HANDGUN THIS COUNTRY HAS EVER OFFERED.

***“THE 1911 IS CURRENTLY MORE
POPULAR THAN EVER, AND THE
REASON IS AN UNDERLYING
EXCELLENCE OF DESIGN.”***



The new Colt, top, is a great pistol. The 1918 Colt, below, is still going strong.



“THE COLT GOVERNMENT MODEL 1911 HAS BEEN THE MOST RESPECTED COMBAT HANDGUN IN THE WORLD FOR OVER 100 YEARS.”

The Colt Government Model 1911 has been the most respected combat handgun in the world for over 100 years. Like the Colt Single Action Army (SAA), the pistol has great emotional attachment, along with a strong sense of history, but unlike the SAA, the Government Model is still on the front lines. The 1911 is currently more popular than ever, and the reason is an underlying excellence of design. The 1911 was a mature design when adopted by the US Army in 1911, as the pistol had been in development since 1898 or earlier. Longevity, versatility, and performance are hallmarks of John Moses Browning designs.

1911 MARKET TODAY

All 1911 handguns on the market today are not Colt pistols. There are a number of excellent handguns based on the 1911 design, including Kimber, SIG, and Springfield. Others brands are made cheaply to sell inexpensively. There is nothing wrong with a basic 1911 GI pistol as offered by Springfield Armory, but the potential for improvement is vast. Because of this, the 1911 can be called the Mr. Potato Head of handguns. Sights, the slide lock safety, the beaver-tail safety, and grip panels may be easily changed, and internal parts may be modified by those with experience and certifications.

1911 VARIETIES

The 1911 is available in other calibers including the 9mm, .38 ACP Super, and 10mm, but the original chambering, the .45 Automatic Colt Pistol, remains most popular. In a steel frame 1911, the .45 ACP cartridge is easily controllable for those that practice. It isn't painful to fire and has a push that isn't as abrupt as high velocity numbers. The balance between power and control is unequalled. There are currently claims that the small calibers are as effective, given “proper load selection,” which we have been told for over 30 years. Until the laws of physics are changed, the .45 ACP will create a larger wound channel, let more blood out, and more air in.

This is a vintage Camp Perry match gun is still pretty accurate.



The 1911 fits most hands well and the controls are within easy reach.

The Commander

There is one legitimate criticism of the 1911 and that is that the piece is heavy. The Colt Commander solved that problem with $\frac{3}{4}$ inch off of the barrel. The first Commander was an aluminum frame pistol, modern Commanders are more often steel frame pistols. I have carried a Commander often in a new holster design from Alsaker. (Alsakercustomleather.com) The Alsaker is a new twist on a classic and it works. The relatively thin slide of the 1911 allows excellent concealment.

CONS

Much criticism has been said that the old 1911s rattled when they were shook. I grew up firing GI 1911 .45s. These were not exactly the golden days because the collector's items must have been in safes! These old guns sometimes had a Colt slide over an Ithaca frame, or a Remington frame and Colt slide but they always worked. They fired every time. They rattled when shook hard but all were accurate enough to put five rounds into five or six inches at 25 yards. This would save your life.

The trigger action was heavy but reset was fast. They were perhaps the ideal trigger action for rapid combat work. The 1911 features a low bore axis. The center line of the bore is low over the hand. This limits muzzle flip. Trigger compression is straight to the rear and controllable. The slide lock safety positively locks the action. The grip safety prevents the trigger from being pressed unless the grip safety is fully depressed. The grip or handle also fits most hands well. All controls are within easy reach of the average hand size. The pistol is faster to an accurate first shot than any other handgun, save perhaps the Browning High Power. However, the High Power is a 9mm.

If you want accuracy it doesn't get any better than the Springfield Loaded Model Target and good ammunition.

1911 DEVELOPED

Between the wars, Army gunsmiths developed the most accurate self-loading handgun ever fired. These handguns served in the National Matches and quickly became legendary for accuracy and durability. By welding up barrels and squeezing slides these soldiers greatly increased the potential of the 1911 .45. Colt introduced a factory version in the National Match. The National Match or Gold Cup pistols are capable of two-inch groups at 25 yards with quality ammunition and sometimes much better.





(above) The 1911 handles well in all firing positions. The heft and balance makes for a great pistol when firing from cover. (below) Even when reduced considerably in size, the 1911 remains both accurate and reliable. (below, right) The Commander and Alsaker custom leather holster are excellent choices for concealed carry.

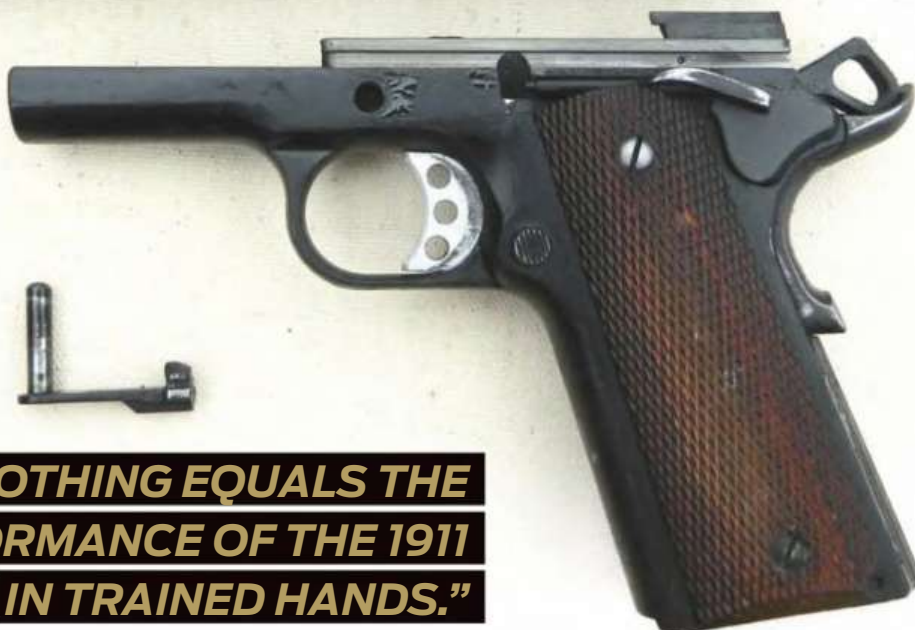


The modern Springfield Loaded Model target model is in much the same category. Today most service grade 1911 handguns will group five rounds into three inches or so at 25 yards, although this is hardly a test of a fighting handgun. A few 1911 handguns will also be exceptional as is the case with any machine requiring hand fitting. As an example, my personal Colt Commander XSE is more accurate than most Government Model pistols. The Black Hills Ammunition 185 grain TAC +P will average two inches at 25 yards, excellent by any standard. What really counts is speed to the first shot, control during rapid fire, and results on multiple targets. Nothing equals the performance of the 1911 in trained hands.



The 1911 field strips easily, even modern versions with a full-length guide rod. This Springfield has some 20,000 plus rounds on it without parts breakage or malfunctions of any type.

**"NOTHING EQUALS THE
PERFORMANCE OF THE 1911
IN TRAINED HANDS."**



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The 1911 can be all it can be in the hands of Novak's GunShop. Many desire to take the 1911 to the next level.

MODERN 1911 TECHNOLOGY

The 1911 isn't old technology. The newest improvements in CNC machinery have been applied to the design in recent years. The modern 1911 is cutting edge. In the original U.S. Army testing, the Colt fired 6,000 rounds during the test program. It was fired until it was too hot to touch, then dunked in a bucket of water, and fired again. Cleaned and oiled every 1,000 rounds, the pistol came through the test without a single malfunction. Modern 1911 handguns from Colt are even better. The 1911 needs to be cleaned and oiled but what machine doesn't?

"FOR THOSE THAT ARE WILLING TO PRACTICE — AND THAT IS THE KEY — THE 1911 OFFERS A REAL ADVANTAGE."

Chosen on its ability to perform reliably and its speed into action, as well as wound potential, the 1911 is the best choice to stop a determined adversary. The speedy second shot, ability to replenish the ammunition supplies quickly, hand fit, and human engineering, all are fight-winning advantages. For those that are willing to practice — and that is the key — the 1911 offers a real advantage. A quality 1911 isn't inexpensive but proficiency at arms is purchased with a different coin.

KEEP IT RUNNING

There are good reasons the 1911 is reliable and other reasons for a failure to feed. Quality magazines are a must. The feed lips control the attitude of the cartridge and must be properly bent and heat-treated. My pistols are presently loaded with Ed Brown magazines. The cartridge functions best with a 1.250 OAL, as intended. It is hardly a criticism of the firearm if improper cartridges are used.

A quality 1911 with service-grade magazines and ammunition is as reliable as any handgun, more reliable than most and more rugged than many. As for accuracy, there are two compo-

Model 1911 Gear Guide



1911 Gun Parts Organizer

Keep all of your parts organized during a fieldstripping or any routine maintenance procedures. Made from acrylic plastic, it fits most gun bags and cleans easily. Also available in black or gray.
redsgear.com
\$26.99

SINCE THE MODEL 1911 HAS SUCH A LONG HISTORY, THERE IS LITTLE REASON TO SUSPECT A WEALTH OF PRODUCTS AVAILABLE TO IMPROVE AND ACCESSORIZE THE WEAPON. THERE ARE MANY MANUFACTURERS OF HIGH-QUALITY PRODUCTS TO HELP YOU MODIFY YOUR 1911, IMPROVE IT, OR SIMPLY REPAIR IT AFTER YEARS OF SERVICE.



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Heat-treated for durability and ruggedness, the five-inch Sig Sauer replacement barrel is chambered for .45 ACP and comes with the link and pin.
sigsauer
\$199



Mainspring Housing/Magwell

Machined from stainless steel with a glass-beaded finish, the mainspring housing is designed to be slightly oversized for a very tight fit in the frame. The mainspring housing has a t-slot cut that accepts the magwell.
egwguns.com
\$74.99



Modern improvements such as the checkered front strap make the 1911 even more user friendly.



Ammunition

Quality of the load, how it feeds, a full powder burn and, accuracy or most important. For many years I have deployed the Black Hills Ammunition 230 grain JHP. The balance of expansion and penetration is ideal. Another load has got my attention. The Black Hills Ammunition 185 grain TAC +P offers high velocity and excellent expansion. I would not be hesitant to recommend this load for personal defense. The .45 ACP is good for deer-sized game to 35 yards or so with the proper load. A 5-inch Government Model and the Black Hills Ammunition 230 grain +P will do the job. If you have a need to store a good supply of ammunition the .45ACP is among the few pistol cartridges that is effective with FMJ loads. It is affordable. The 230 grain FMJ will do the job.

nents, intrinsic and practical. Locked into a machine rest, a handgun without sights and grips may be accuracy tested.

Perfect accuracy would be a 0.451-inch group. This will not happen past seven yards. Practical accuracy includes considerations such as the quality of the trigger compression and sight picture. A good tight modern 1911 will easily cut a three-inch, five-shot group at 25 yards from the bench. At 7 yards practically any 1911 and load will cut a single ragged hole.

CONCLUSION

When all is said and done, the 1911 remains the premier sidearm for personal defense and has been for over 100 years. If you are willing to master the manual of arms and maintenance requirements this is a great all around handgun. You'd be hard pressed to find, in a tight situation where stopping power, accuracy, and ruggedness are needed, a better handgun perfectly suited for a survivor. ■■■



1911 Slide Kit

Chambered in .45 ACP, the slide comes complete and ready to shoot. With extra wide front and rear cocking serrations for a more modern look, the slide is cut for Para Ordnance sights and is a series 80. The kit includes: slide, barrel, barrel bushing, recoil spring, recoil guide rod, recoil spring plug, firing pin, firing pin spring, and firing pin stop.

1911builders.com
\$500



Viking Tactics SIG 1911 Sights

Upgrade the stock sights on your 1911 with these fiber optic examples for better accuracy.

vikingtactics.com
\$175



Chip McCormick Power Magazine

CMC'S extra heavy duty stainless steel 10 round Magazine is designed to significantly increase reliability and service life, even when kept fully loaded and seated in a pistol for extended periods. This is the 1911 10-round .45 ACP, but other calibers are available.

cmcmags.com
\$35.95



backcountry.10/15

Desert Desserts

Story and Photography by
Christopher Nyerger

MESQUITE PODS
ARE ONE OF THE
DESERT'S BEST
WILD FOODS



Mesquite grows wild and prolific in the American deserts. The first mesquite fruits look similar to green beans.

If you've ever driven through the low desert in the area of Palm Springs, California, you've undoubtedly driven by some of the common mesquite plants (*Prosopis velutina*). The yellow pods were once used by all the indigenous inhabitants of the desert regions, usually ground into a flour and eaten. The ripe pods are sweet, and when ground into flour, can be used to make a variety of tasty and nutritious dishes.

This shrub, or one of its close relatives, can be found throughout the deserts of Southern California, southern Nevada, parts of Utah, in Arizona along the full lengths of both the Colorado and Gila Rivers, southwestern New Mexico, and even east to Texas along the Rio Grande River.

If the plant wasn't in flower or fruit, it's somewhat inconspicuous, and you may not have known it was mesquite. It was just one of those shrubby non-descript road or trail-side plants that blends in with the landscape. Upon closer inspection, you see that the leaf is even-pinnately divided into smaller round or linear segments, giving the plant a ferny look. There are little spines on the stems, generally two per node.

The mesquite fruits that first appear are like hanging green beans, and by summer they become pale yellow, dry, and maybe six inches long. They look like slightly withered green beans, but yellow.

"THE RIPE PODS ARE SWEET, AND WHEN GROUND INTO FLOUR, CAN BE USED TO MAKE A VARIETY OF TASTY AND NUTRITIOUS DISHES."



The leaf is even-pinnately divided into smaller round or linear segments, giving the plant a fern look. There are little spines on the stems, generally two per node.



(above) A young mesquite shoot with green leaves, long before the flowers and pods will form. (right) A close up of a collection of mesquite pods ready for grinding.



Mesquite Pods

The yellow pods of mesquite are the main prize of this desert shrub or tree. They are harvested when ripe, which is typically sometime in the summer. There are a number of ways in which the pods have been used for food over the centuries. Perhaps one of the simplest is to just pick the mature pods, chew them, and spit out the seeds. (The screwbean is used similarly). Traditionally, the whole pods would be ground into a flour by the desert Indians which was then used alone or mixed with other flours in order to make breads and cakes.

Paul Campbell is the author of *Survival Skills of Native California* and loves the flour made from mesquite. If he couldn't gather enough on his travels to the desert, he would have some of his Seri Indian friends from the desert send him some.

Family Species Data

Mesquite (*Fabaceae*) is a member of the Legume Family, which is a big family world-wide. This family has about 730 genera and 19,400 species. In California, this large group is represented by 50 genera.

One genus in this group is *Prosopis*. There are 44 species of *Prosopis* worldwide, with three found in California and the surrounding areas. One of those is mesquite, *Prosopis glandulosa*. Another species is the screwbean (*P. pubescens*).

Both are natives of the Southwest.

Screwbean vs. Mesquite

» One of the close relatives of the mesquite is the screwbean (*Prosopis pubescens*). When not in flower or fruit, mesquite and screwbean are very hard to discern. But when in fruit, the screwbean is just as the name implies: a bean that looks like you twisted it. It's somewhat shorter than the mesquite fruit, and round in the cross section. Like mesquite, screwbean can be eaten and provides a great source of fiber, sugar, and protein. It can even be brewed in place of coffee.



Another variety of mesquite is the Screwbean, so named for its pods that appeared twisted in shape. They are also known as tornillo (*Prosopis rep-tans*).

Mesquite Tea

Once when I visited Campbell, he served me a drink and asked me to guess what I was drinking. I took a slow sip of the very sweet warm drink and made four (wrong) guesses as he laughed. It turned out that he simply brewed some of the pounded mesquite meal in hot water and poured off the dark liquid into my cup. It was absolutely delicious, one that even the most finicky and discriminating eaters will rave about.

Medicinal Leaves

The leaves of the mesquite can be dried, powdered, and applied directly to cuts and scrapes to reduce inflammation and even stop minor bleeding. A tea made from an infusion of the leaves has been used effectively to treat sunburns, rashes, and insect bites. This tea can also be used as a gargle for mouth sores or sore throats.

Though often overlooked as merely a tree covered in pods or as a great wood to add flavor to meat, mesquite can offer a wholesome and tasty surprise when broken open, ground, and eaten. **ADD**

Mesquite Cakes

Paul Campbell shares a traditional mesquite bean cake recipe. Mix ground, whole-bean, dried mesquite flour into boiling water. Reduce the heat and blend it all into a thick mush.

Let it simmer for a few minutes longer to tenderize it all, particularly if the flour is coarse. Blend in additional flour until the mixture thickens and it stiffens enough to hold its shape. Spread this out as cakes two to four inches in diameter and about half-inch thick on cookie sheet or tinfoil. Dry them in the sun or on rocks near a fire, which Campbell said could take a few days (keep them covered). If at home, place the cakes in a pre-heated oven at 300 degrees for two hours, or until cakes have dried a bit, then reduce the heat to 150 degrees or less for three to four hours.

With heat removed, leave them out for even more time to thoroughly dry.

"One cup of flour makes a large cake for about four people," Campbell explains. "Everyone I talk to is amazed and cannot believe the manufacture of such a toothsome, natural, molasses-like food."

These rich, molasses-like cakes were used as travel food by Indians. Pieces were broken off and eaten or reconstituted in water to make a drink, hot or cold. According to Campbell, these cakes are "high in protein, fiber, and sugar of the kind that diabetics can easily assimilate. I understand that mesquite digests slowly and helps maintain stable blood sugar."



A Note About the Palo Verde Pods

» In the general areas where the mesquite grows, you will also find a native tree called the palo verde (*Cercidium microphyllum*). Palo verde is also in the pea family, and the seeds from the pods are edible and were long-used by the desert Indians. However, whenever this plant is mentioned, it is called a "survival food." I have often wondered why a palatable seed should be called a "survival food." That is similar to something like mud and bark that you'd only eat as a last resort to starvation. Yes, the palo verde seeds are hard and require grinding, but it seems that this seed was always given second fiddle if the more-desirable mesquite pod was readily available. Whereas the palo verde seeds are sweet and can be eaten raw as a snack or in a salad.

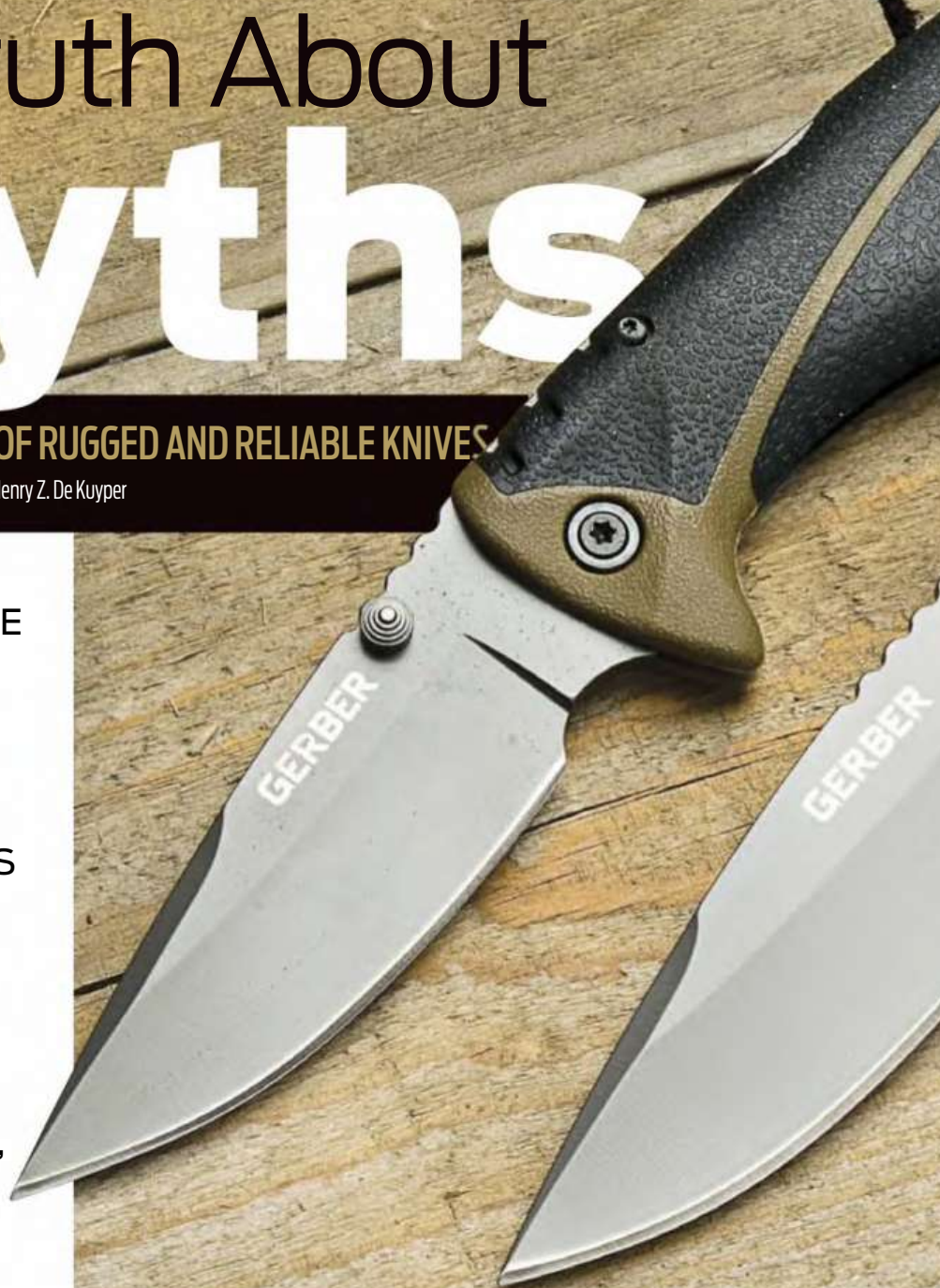
The palo verde tree is also in the pea genus (*Prosopis*), similar to mesquite, and the seeds from the pods are edible and were long-used by the desert Indians as well.

The Truth About Myths

→ **A DEPENDABLE SERIES OF RUGGED AND RELIABLE KNIVES**

Story by **James E. House** | Photography by Henry Z. De Kuyper

ALTHOUGH THERE ARE SEVERAL KNIVES AND 'HAWKS IN GERBER GEAR'S MYTH SERIES, THE TWO FIXED BLADES (ONE IS A GUT BLADE) AND THE FOLDING LOCK BACK ARE GREAT CHOICES FOR MANY USES. THEY ARE LIGHTWEIGHT, BUILT WELL, AND OFFER A CONFIDENCE IN THEIR PERFORMANCE DURING MANY SURVIVAL AND OUTDOOR TASKS.





**“THESE
ARE REAL,
HONEST
WORKING
KNIVES.”**



THE MYTH FOLDER

With a 3.5-inch drop point blade, the Myth folding knife weighs only 2.9 ounces. The blade is hollow ground and sufficiently broad to give the knife durability, while projections on either side of the blade are placed so that thumb pressure can be applied to assist opening. A conventional pivoted lever with release in the middle of the handle provides a sturdy means of locking the blade open. The blade measures 0.130-inch in thickness, which is sufficient for the uses to which a folding knife is appropriate. The blade is given a durable coating that gives it a dull gray appearance.

The Myth folder has virtually no side-to-side movement and seems perfectly rigid. Ridges are placed on the forward section of the blade lock lever, and the back edge of the blade also has jimping just forward of the handle in order to provide a secure grip with the ability to apply thumb pressure.

THE FOLDER SHEATH

The folding Myth has a rigid, molded plastic shell that functions as a hard case having a sturdy rubber flap closure that extends along the back of the sheath forming a belt loop. The lower end of the rubber strap is anchored near the end of the sheath on the backside. The sheath has a drain hole located at the bottom. It also has a built-in sharpener consisting of two carbide abrasive elements with surfaces that are placed so they form a "V" at the correct angle.

THE FIXED BLADE/GUT MYTH

My interaction with the Gerber Myth knives began with the fixed blade model. It appealed to me as a knife of convenient size and weight. Although not necessarily the best choice for constructing shelters or splitting firewood, the 3.75-inch blade is just about the right size for general use.

The fixed blade Myth has full-tang construction and has a very sturdy feel. It measures 8.5-inches in length and

weighs 4.9 ounces. At the thickest section of the spine, the blade measures 0.135 inches. Like the folding model, the blade has a dark gray, non-reflective coating.

THE FIXED SHEATH

As in the case with the folding model, the fixed blade Myth comes with a sheath made of rigid plastic. It also features a drain hole at the bottom, and a carbide sharpener is incorporated on the backside at the bottom of the sheath. At the forward end of the handle are placed two grooves, one on either side. When the knife is inserted fully in the sheath, these grooves mate with two ridges molded on inside edges of the sheath to provide a friction lock of the knife in the sheath.

For situations in which the knife is to be held even more securely, a rubber latch is provided. This heavy rubber strap is attached to the back of the sheath and has an opening that fits over the butt of the grip to prevent the knife from slipping upward and out of the sheath. One negative aspect of the sheath is the fact that the blade is not held securely, which allows it to rattle against the sides.

THE MYTH HANDLES

In spite of the light weight, all three Myth knives feature a textured rubber handle that provides a secure grip. The forward end of the polymer handle features a curved descending portion that forms an integral hand guard. The grip is rather flat in cross section, which helps prevent the knife from turning in the hand.

At the butt of the grip a hole is placed in order to attach a lanyard should one be deemed desirable. This is a feature that I like because I frequently attach a leather thong that I wrap around my wrist during some types of cutting activities.

READY TO ROLL

These are real, honest working knives. Their rubbery grips give a good purchase in the hand, and their blades have excellent shapes for general use. Moreover, their light weight makes them convenient to carry, making any of these knives an excellent companion for countless outdoor activities. ■■■





ACTUAL
SIZE

SPECIFICATIONS

	Folder	Fixed
Blade length (inches)	3.5	3.75
Blade thickness (inches)	0.130	0.135
Overall length (inches)	4.75/8.25	8.5
Weight (inches)	2.9	4.9
Handle	Rubberized	Rubberized

gerbergear.com | Folder: \$50; Fixed/Gut: \$63



Gourmet Grubs

BUGS: DINNER IS CRAWLING EVERYWHERE



IF YOU CAN'T CATCH AN ANIMAL IN A TRAP, HOOK A FISH FROM THE STREAM, OR EVEN FIND AN EDIBLE PLANT NEARBY, THERE ARE STILL THOUSANDS OF THINGS AROUND YOU THAT YOU CAN EAT. IN A SURVIVAL SCENARIO, BUGS ARE DINNER.

Eating insects is completely normal for much of the world and, in a catastrophic situation, gathering these tiny morsels could be the difference between life and death. Bugs are also frequently eaten in different parts of the world, including caterpillars, termites (Africa), crickets (Asia), bees, ants (Asia), locusts (Mexico), wasps (Japan), and tarantulas in South America.

Insects can also be good for you. They are often low in carbohydrates, full of protein, high in Vitamin B, iron, zinc, and the nutritional value is comparable to meat sources such as chicken and beef. However, you shouldn't eat something you found dead and you should try to keep them as fresh as possible. Experts say you can eat most insects raw but it is safer if they are cooked by boiling them in water or roasting them in a fire.

As a rule, avoid insects that appear hairy or fuzzy, give off a bad smell, or have bright colors including red, yellow, and orange. Bugs that are brown, green and black are often better choices. Flies, mosquitoes, and ticks may carry diseases. In urban areas, bugs exposed to pesticides or snails that eat rat droppings might carry deadly parasites.

Here's our guide to the various delicacies you might use to stave off starvation in an end-of-the-world situation.

» Story by **Rick J. MacIntyre**

Grasshopper

Grasshopper

You can eat grasshoppers raw or cooked. They have a lot of protein and calcium and you can snap off the legs and wings before eating. Twist off the head if you want to avoid a crunch. There are many varieties of edible grasshoppers.

Scorpions

Found in the southwest states, scorpions can be eaten both raw and cooked. Roast until it is blackened. Be sure to take off the tail, stinger, and poison sac first.

Scorpion

***“YOU CAN EAT
GRASSHOPPERS
RAW OR COOKED.”***

Cockroaches

Don't go for the cockroaches you find in your home. However, the hundreds of hard-shelled beetles found outside will work. They move fast but when you catch them, grill them until blackened. Remove the shell and legs.

Cockroach

Ladybugs

These might be cute but they can also provide a small amount of protein.

Ladybug

Bees and Wasps

Remove the stinger, wings and legs. If you can manage it try tying a silk thread to a caught bee and following the trail to the nest for more bees and their honey.

Bee

Wasp



Ant

Termites

Usually eaten raw, you can find termites near dead wood. They have a vague nutty flavor. Remove the wings.



Termite

Ants

Most ant varieties can be eaten except for stinging fire ants. Boil them to make them taste better and try to find larvae for larger quantities.

Praying Mantis

The taste of a praying mantis can vary greatly when eaten raw, often with a wooden flavor. You can find them in early summer or late spring and they are relatively easy to catch. Get rid of the heads, forearms, and legs before cooking them.



Praying Mantis

Cicadas


They only pop up every 17 years, but the bodies of Cicadas are very juicy and might taste like corn. Take off the sharp head, legs, and wings and look for them in the mornings.

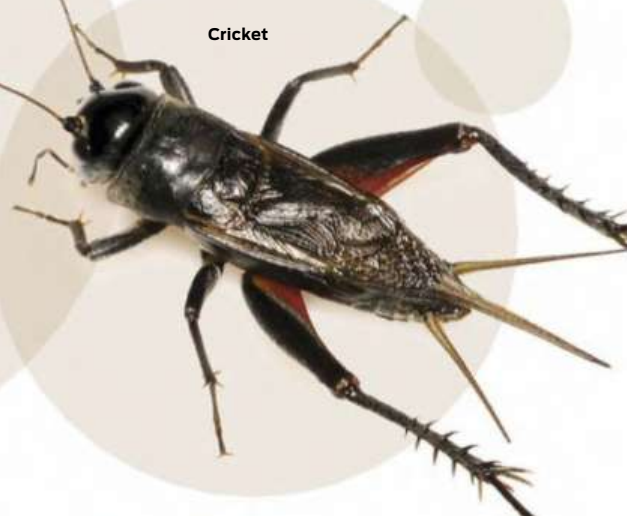


Cicada

“THEY ONLY POP UP EVERY 17 YEARS, BUT THE BODIES OF CICADAS ARE VERY JUICY AND MIGHT TASTE LIKE CORN.”

Crickets

Use your sense of hearing to zero in on these insects at night. Remove the head and legs before eating and cook them over a fire. 



Cricket

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Gear Guide^{10.15}

Flame Killers

The First Line of Defense Against a Fire

Story by **Michael D'Angona**

FIRE IS A KEY ESSENTIAL during a survival or emergency situation. It can help light up your camp, cook your food and keep you warm. But as beneficial as it is; fire has a dark side. Once out of control, fire can cause unspeakable damage to property and the surrounding environment. Worse yet, it can cause lifelong pain, suffering, and even death to people not lucky enough to avoid its devastating path.

The key to avoiding these horrible scenarios is to stop the blaze as soon as it erupts. With fires doubling in size within minutes, you need the right tool to battle one of nature's most powerful forces; and that tool comes in the form of the ever-present fire extinguisher.

Once armed with the right weapon, you will have all the power you need to face nature's unpredictable fury head on and emerge victorious.

What To Look For

» Fire extinguishers are your first line of defense against an out-of-control blaze. But just grabbing the nearest one doesn't assure that it will do the job; in fact it may make the situation far worse.

When choosing a fire extinguishers always make note of the types of fires that it can handle. Some are for use against paper and cloth materials, others handle flammable liquids, while others are intended for electrical or grease and oil based fires. Some can actually work against multiple types of fires. Your choices are numerous and it's essential to buy the type of extinguisher best suited to handle your particular needs should a fire break out.

Extinguisher size, tank capacity, storage-ability, disposable or rechargeable, are all questions that need to be answered wisely before you purchase.



First Alert Commercial Fire Extinguisher

This extinguisher means business. Designed for commercial buildings, this class 3-A 40-B:C rated fire extinguisher can put out most fires quickly and efficiently. It is constructed of commercial-strength corrosion-resistant metal complete with a heavy-duty metal head. It includes a metal pull pin with a safety seal to prevent an accidental discharge, and easy-to-follow instructions make putting out an unexpected fire a relatively simple task.

- Class ABC
- Corrosion-resistant
- Durable metal head
- Easy-to-follow instructions
- Includes wall mounting hook
- Meets UL standards

FirstAlert.com
\$64.99



First Alert Kitchen Fire Extinguisher

Sodium bicarbonate is the perfect defense against a kitchen grease fire. It's non-toxic, so you never have to worry about chemicals around your family's food. Just mount this unique little item near your stove and be ready if or when a fire erupts. The cap doubles as a mounting bracket and its quick release feature allows you quick access to this life-saving device. You hope to never use this item but rest assured it will be ready to tackle even the most aggressive household fires.

- Easy push trigger
- Household use
- Quick release wall bracket
- Easy-test pressure check
- Easy to grip handle
- UL approved

FirstAlert.com
\$25.25



Fire Extinguishers

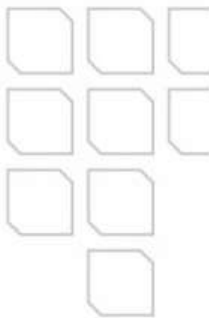


Ice Fire

This is not your typical fire extinguisher by any means. The Ice Fire extinguisher is thrown into an out-of-control blaze like a hand grenade. Its outer casing then breaks releasing its interior liquid which splashes the surrounding area and extinguishes the flames. This tiny canister packs a punch by putting out a fire within 3 seconds and cooling down the surrounding area to prevent a re-ignition. It is safe for the environment and requires only plain water for clean-up afterwards. Perfect for schools, hospitals, apartments, office building and just about everywhere else!

- Throw and go
- Extinguishes immediately
- Environmentally safe
- Easy water clean-up
- Stops fire expansion

Alibaba.com



Small Fire Extinguisher Covers

Your fire extinguisher is no good to anyone if it's rusted, brittle, and unable to operate. Protect your life-saving device from the elements with this durable protective cover. It is perfect for extinguishers that have to be stored outdoors for extended periods of time. Its bright red color and white printed "FIRE" wording allows your extinguisher to be noticed immediately when a fire breaks out. The clear window allows for easy inspection if needed. Extend your extinguisher's operating life and prevent equipment failure with these useful protective covers.

- Protects from the elements
- PVC material
- See-through clear window
- Brilliant red color
- Durable and long-lasting
- Fits most small extinguishers

FireSafetySupplier.com

\$6.55





Automobile Fire Extinguisher

Don't think fires only happen in your home. Your automobile is also susceptible to fires, both under the hood and in the passenger area. Be prepared with the Kiddee Auto Fire Extinguisher. This disposable unit fits easily in most automobiles, campers, and even on motorcycles. Whenever the unexpected happens, you will be relieved to have this valuable tool nearby. Uses sodium bicarbonate to extinguish flammable liquid and live electrical fires. A must-have vehicle necessity.

- Sodium Bicarbonate material
- Disposable
- UL rating 5-B:C
- Compact design
- For B and C fires
- Charge weight: 2 pounds

OnTimeSupplies.com
\$32.24

Tundra Fire Extinguishing Spray (2 pk)

Fires double in size every 30 seconds, so having an easy-to-use accessible extinguisher nearby is always a must. The Tundra produces better results than your typical extinguisher. It sprays three times wider in surface area and continues spraying for up to 32 seconds; four time more than other similar items. This possible life-saving tool works on paper, fabric, and wood, cooking oil and even electric appliances and other kitchen equipment. It's extremely easy to use during a fire emergency. Strong, accurate, and effective to put out the fire quickly, this compact extinguisher is a must have for everyone.

- Long discharge time
- Simple spray action
- Perfect for kitchen fires
- Stores between 32-107 degrees F
- Highly effective
- Easy cleaning

FirstAlertStore.com
\$29.95



Fire Gone

This compact extinguisher is your perfect weapon against small fires. The Fire Gone™ Fire Suppressant is an aerosol can that suppresses fires when the trigger is activated. It works on ABC and K fires which make it perfect for use at home, in campers, Bug-out locations, or anywhere you need quick and easy access in case a fire erupts. This product encapsulates the fire itself while forming a foam blanket that surrounds the exterior of the alighted material, which in turn starves the fire of essential oxygen. The fire extinguishing foam is biodegradable and easy to clean up. Store several cans for optimum fire protection.

- Simple to use
- Compact and portable
- Non-hazardous
- Effective on ABC and K fires
- Environmentally safe
- Biodegradable

BlowOff.com
\$19.99

Fire Extinguishers

Know Your Fire

Not all extinguishers work universally against all types of fires. In fact, using the wrong extinguisher could turn your small blaze into a raging out-of-control inferno, almost instantly jeopardizing the safety and possibly lives of your family, friends, or co-workers. The key to preventing this major mishap is by identifying the type of fire that may erupt in a certain location and matching it with the appropriate type of extinguisher. This is

a simple process using lettered symbols labeled on the extinguisher to identify the various types of combustible materials. Use the information below to find the one that fits your specific needs.

Class A — Wood, paper, cloth, and other ordinary materials. Perfect for offices, bedrooms, and some outdoor applications.

Class B — Gasoline, oil, paint, and most other flammable liquids. The garage, storage sheds, and work areas usually contain this type of extinguisher.

Class C — Live electrical equipment. Ideal for use near electrical panels, around multiple power cords, or near complicated wiring or light fixtures.

Class D — Combustible materials, including combustible alloys. Although the rarest fire type on the list, some homes or offices may have some form of combustible metal including magnesium, potassium, or lithium.

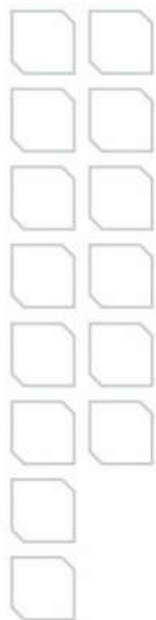
Class K — Cooking applications (animal or vegetable oils and fats). Keep one in your kitchen, near your outdoor grill, or wherever you fry or barbecue.

Black Dry Chemical Fire Extinguisher

High-performance vehicles are prone to unexpected fires like any other vehicle. Be prepared by protecting yourself and your automobile with this high-quality extinguisher by MAXOUT! This A-rated extinguisher is twice the size and twice the power of other similar auto extinguishers. Its fire drowning power is provided by a special fluidized and siliconized mono ammonium phosphate dry chemical that insulates Class A fires and smothers Class B fires, breaking the chain reaction to stop the blaze.

- 6-year warranty
- US Coast Guard approved
- Rechargeable
- High-quality steel
- All-metal valve construction
- Made in U.S.A

H3RPerformance.com
\$140.95



Stainless Steel Water Fire Extinguishers

With all the advanced fire extinguishers on the market today, don't underestimate the water filled versions. These traditional extinguishers are your perfect choice for paper, wood, cloth, and other items found in the Class A fire category. Just pull the pin and this stainless steel, easy-to-handle unit will douse the fire surge quickly and without the need for foam or chemical powders. The polished outer casing will ensure years of dependable use, and its protective plastic base prevents unneeded dents and scratches. The included "J" bracket secures the extinguisher to the wall for easy access and availability.

- Works with Class A fires
- Stainless steel
- Polished exterior
- Plastic protection base
- Shipping weight: 20.75 pounds
- Simple-to-use

FireExtinguisherStore.co.uk
\$93



OMP Hand Held Fire Extinguisher

This extinguisher exhibits the perfect balance between its firefighting ability and its user-friendly and easy-to-carry operation. Filled with Aqueous Film Forming Foam (AFFF) extinguishant, this canister delivers a fast and powerful means to tackle flammable liquids. The foam, once discharged, will form a seal over the surface of the liquid and prevent re-ignition which makes it indispensable to have near garages, work areas, or just about anywhere flammable liquids are stored. Its included aluminum wall mount secures the unit using dual quick-release clamps. Fires expand quickly...shut it down fast and efficiently with this ideal extinguisher.

- 2.4-liter capacity
- Foam based extinguishant
- Included mounting bracket
- Quick release clamps
- Simple squeeze operation
- Easy-to-hold size

Demon-Tweeks.co.uk
\$122.55

Carbon Dioxide Fire Extinguisher

Don't try to put out flammable liquid or electrical fires with water; you will only make the situation far worse. Carbon Dioxide is what you need, and this compact extinguisher delivers the goods to put out the flames fast before your unexpected fire turns into an inferno. This type of fire extinguisher is a must-have for anyone working around oil, gasoline, kerosene, or any other flammable liquid. Its unique funnel-shaped nozzle ensures a wide dispersal of "fire-killing" material exactly where you need it.

- 2 kg. size
- Useful on flammable liquids
- Minimizes electrical damage
- Funnel-style spray tip
- Included mounting bracket
- Five-year warranty

ToolsInStock.com
\$188





Mariner 5 Fire Extinguisher

Fires occur on the water as well as on land, so be prepared with this U.S. Coast Guard approved Class B and C fire-fighting assistant. Using powder coated aluminum; this extinguisher will put out fires erupting from your boat's engine, fuel lines, or damaged electrical gear. Just pull the pin, aim at the base of the fire, and squeeze the easy grip trigger to release this extinguishers full fury and prevent a bad situation out at sea from becoming much worse.

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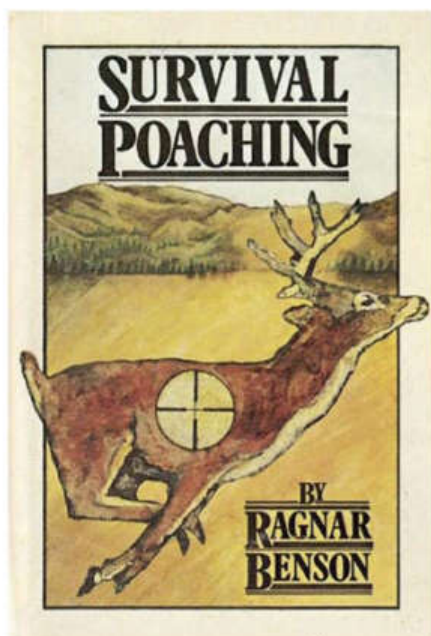
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Review by J.D.Hughes

Survival Poaching

By Ragnar Benson



Anyone who has spent any time studying and practicing survival skills and self-preparedness understands Maslow's Hierarchy of Needs, whether they know it or not. Biological needs, food, water, and air, those are at the base of the pyramid. Hunting and gathering is how civilization got its start. Anyone who hunts can tell you it is quite literally hit or miss. Hunting requires a great deal of skill to be a useful method of producing the calories needed to survive. Gardening is far more efficient but is dependent on growing conditions, the time of year, and the ability to properly store food once it is harvested. In an extended survival scenario, you can only store so much canned and dehydrated food.

Ragnar Benson is the pen name of a particularly prolific survivalist author. Beginning in the late 1970s, Benson has written more than 40 books on many aspects of survivalism and self-reliance. His books cover a broad range, from building a retreat and using veterinary medications for first aid to creating a new identity and disappearing from society.

One of his first books, published by Paladin Press and still in print, is *Survival Poaching*. Today, poachers are best known for decimating the populations of endangered animals for their body parts. Ivory, horn, feet, internal organs, all used for everything from jewelry to medicine and even aphrodisiacs. Without laws regulating the hunting of wild game we would not see the abundance of such wildlife today. Gone are the days when the buffalo and the Carrier pigeon blacked out the prairies and the skies, precisely because of unregulated hunting.

Thanks to conservation efforts, wolves, for example, are once again reaching numbers that will support controlled hunts. There was a time, however, when poaching was a much more noble endeavor, when society's elites cordoned off nature for their own exclusive use, banning hunting entirely.

Benson's story is not quite that high-minded. One must keep in mind his poaching philosophy was developed in the 1940s and came mainly from the point of view of a country boy who moved to a big city. *Why shouldn't I shoot squirrels and pigeons to feed my family?*

Of course, extrapolating that idea to an ever growing population, and soon you have your answer — no more squirrels or pigeons. Many of the anecdotes he relates in the book are about flouting the law and getting away with it, subjects that should be entirely ignored. For example, the book begins with the chapter "Why Poach?" and the following two chapters are specifically concerned with how to get away with illegal poaching.

That being said, it is the body of the book contained in chapters six through 22 that is truly relevant and useful to the matter at hand: providing food for your family in the event of a long-term disaster. These chapters go into great detail, including pictures and diagrams, on how to procure game for the dinner table in the most efficient ways possible, using everything from traditional traps and snares to poisons.

Hopefully, if you as a survivalist ever need to use the information from this book, it will just be survival, not illegal poaching. **AND**

Disclaimer:

Some of the techniques described in this book are illegal and unethical under normal everyday circumstances. Always research the laws of your state before attempting to recreate anything in the book. When in a survival situation, however, you must weigh the law against your likelihood of staying alive.

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The Benefits of a Forest Fire

» **Fire is forever.** If you burn something, it can never be repaired because a fire forever changes the object on a molecular level. The is true for a house, a car, you... but not Mother Nature. Fire, as it has been studied in the last 100 years, is a very important part of the lifecycle of a forest.

Since the emergence of the U.S. Forest Service in the early part of the 20th Century, its main focus was to stamp out forest fires, as they were considered bad for the environment. This theory produced more forest fires, actually, as the forest didn't have a chance to clean itself out. If an area goes a long time without a fire, fuels, such as dead trees, pine needles, leaf litter, and shrubs build up to unnatural levels. A small spark can quickly ignite a very large fire with plenty of fuel to keep it going.

It wasn't until the 1970s that the U.S. Forest Service began allowing many natural fires (started by lightning) to burn themselves out, as long as they were no threat to civilization. In 1988, for example, massive fires swept through Yellowstone National Park, causing 750,000 of acres of devastation and killing many of the park's elk and black bears.

However, a forest fire isn't always a bad thing, as the nearly 400 research projects in the Yellowstone burn area concluded. Here are examples of several species of plants and animals that benefit from a forest fire.

1. Three-toed woodpecker: After a burn, dead trees become a haven for insects, on which the woodpecker feeds.
2. The lodgepole pine stores its seeds in a resin-encased cone that can only be released when the resin is melted from a fire.
3. Huckleberries: One of the best places for huckleberries to grow is in a recently burned area.
4. Antelope and Bison: As prairie animals, they depend on fires to clear shrubs and trees to open up new grasslands for them to eat.
5. Wild turkeys feed on insects that are flushed out by the fires.
6. The Fire-chaser Beetle (*Melanophila*) actually heads towards a fire, as they can only lay their eggs in freshly burnt trees.
7. Plants such as morning glory, rock rose, chaparral, manzanita, and scrub oak require intense heat for their seeds to germinate. **AND**

Five Largest Forest Fires in America

1. Great Fire of 1910

When: August 20-21, 1910

Location: Idaho, Montana, Washington

Burned: 3 million acres

Deaths: 86 people (78 were firefighters)

Interesting Fact: This fire elevated firefighters to the public hero status they still enjoy today. (See page 80).

2. The Great Michigan Fire

When: October 8, 1871

Location: Port Huron, Michigan

Burned: 2.5 million acres

Deaths: about 500

Interesting Fact: This fire started on the same day as the famous Great Chicago Fire and the Peshtigo Fire (see 5).

3. 2008 California Wildfires

When: May 13 to September 10, 2008

Location: Northern and Central Coast of California

Burned: 1.55 million acres

Deaths: 32

Interesting Fact: There were 3,596 individual fires burning at the height of the fire, most started by lightning storms on June 20.

4. Taylor Complex Fire

When: June 2004

Location: Alaska

Burned: 1.305 million acres

Deaths: 0

Interesting Fact: The fires were started by lightning, destroyed several remote homes and buildings, and helped break the record for the most Alaskan acres burned in a single year (6 million)

5. Peshtigo Fire

When: October 8, 1871

Location: Peshtigo, Wisconsin

Burned: 1.2 million acres

Deaths: 1,500 to 2,000

Interesting Facts: The firestorm was a mile high, five miles wide and travelling between 90 and 100 mph throwing railway cars and houses into the air. It is the most deadly fire in U.S. history.



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